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ABSTRACT

A report on the 1985 Higher Education Utilization Study provides estimates of the availability, use, and support of instructional telecommunications technologies (video, audio, and computers) in U.S. colleges and universities. Use patterns of these technologies in postsecondary teacher preparation programs are also reported. A census survey was conducted with 2,830 public and private two-year and four-year postsecondary institutions included in the Higher Education Directory. Availability of video and audio for instruction concentrated on whether there were various central reception/distribution facilities. Institutional support for instructional technologies was demonstrated in several ways, including consortia membership or services, faculty training programs and expert assistance provided by institutions, and financial support or incentives for use. During 1984-1985, video, audio, and computer technologies were available in some form for instructional use by faculty and students in more than 90% of the institutions. Availability of most forms of equipment, particularly of larger or more sophisticated and expensive equipment, was substantially greater among public than private institutions. Appendices include the questionnaires, information on study design and procedures, a list of members of the Study Advisory Committee, and 126 data tables. (SW)

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Status of Instructional
Technology in Higher Education

Report of Findings From the 1984-85 Higher
Education Utilization Study

Corporation for Public Broadcasting

John A. Riccobono

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June 1986

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PREFACE

Since 1970, the Corporation for Public Broadcasting (CPB) and the Center for Statistics, formerly the National Center for Education Statistics (NCES), have co-sponsored a program of research into the educational uses of telecommunications technologies. As part of this program, national surveys have been conducted in elementary, secondary, and postsecondary schools and in American households. These surveys are yielding information about the extent to which educational technologies are available, and how they are being used for both formal and informal learning. Such information is needed as a basis for effective planning, implementation, and evaluation of policies and programs designed to enhance educational achievement and to upgrade the instructional delivery system.

The first Higher Education Utilization Study was conducted in 1979 and examined only the uses of television by U.S. colleges and universities. The current study represents an attempt to update this prior research on television and to extend the investigation into the availability and use of other video (videodisc, electronic blackboard), audio, and computer technologies.

We extend our sincere appreciation to all those who contributed to the successful conduct of this study. We are indebted to our colleagues at the nine national education associations that endorsed this study: American Association of Community and Junior Colleges, American Association of State Colleges and Universities, American Council on Education, Association of American Colleges, Association of American Universities, Association of Physical Plant Administrators of Universities and Colleges, Council of Independent Colleges, National Association of State Universities and Land Grant Colleges, and National University Continuing Education Association.

During the design phase of this study, sound advice and guidance was provided by a Study Advisory Committee. The names and primary affiliations of the members of this Committee are listed in Appendix C.

At the Corporation for Public Broadcasting, Peter Dirr, Joan Katz, and Richard Grefe contributed significantly to the study, from initial design planning through critical review of report drafts.

At the Center for Statistics, Sam Perg and Doug Wright provided guidance and support throughout the study.

Our associates at Research Triangle Institute (RTI) of North Carolina, under the expert direction of Dr. Graham Burkheimer, were responsible for the survey operations aspects of this study. Others at RTI who worked closely with the Principal Investigator, Dr. John A. Riccobono, and deserve special acknowledgment are: Elinor Cifton, who provided programming support for the data analyses, and Jeri Conklin who typed, proofed, and assembled the various drafts of the report.

A final word of acknowledgment and an expression of gratitude is due to the many faculty and administrators of the colleges and universities who took the time and effort to provide comprehensive information about the use of educational technologies within their institution. Without their commitment, this study would not have been possible.

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I. INTRODUCTION

A. General

The explosive growth of technology in recent years has been well publicized. There are few occupations in which people do not encounter technology on a daily basis and have to deal with it in some manner. Education has come under increasing pressure to prepare our Nation's children and adults for the demands and opportunities presented by this rapid growth in technology. Parents are demanding that their children become "computer literate;" and, as a result, computers have been infused into our elementary and secondary school classrooms. However, critics claim that most teachers are ill-prepared to use this equipment and, consequently, actively resist it. Some point to this lack of qualified teachers as a major contributor to charges of "mediocrity" leveled against our public schools. Similarly, at the postsecondary level, critics have charged that many colleges and universities have been slow to assume their responsibility for training in technology, or have relinquished it altogether, and that private industry has been forced to assume this function.

The criticism is not restricted to computers, but extends to television and other video/audio technologies as well. Many feel that video and audio have not yet come close to fulfilling their promise for education, despite continued growth and increasing potential for application of these technologies.

On the other hand, proponents of education argue that such charges are largely unfounded and, to some extent, misguided. They point out that numerous settings exist in which many innovative educational applications of video, audio, and computer technology are taking place, particularly at the postsecondary level. Many contend that the issue, especially for computers, is not how educators can best train students in the use of the new technology, but rather, how educators can best use the technology to improve the quality and effectiveness of instruction. They argue that because of the tremendous advances in hardware, the importance of technology in instruction is being overemphasized, and that effective classroom application will remain limited until more effort is devoted to the production of high-quality instructional program materials.

While the debate continues, the fact is that very little systematic information exists regarding the use of technology in education. Some recent investigations have been conducted at the elementary and secondary school level.¹ Examinations of postsecondary utilization have been less recent and limited to investigation of a particular technology,² or have been conducted

1 See, for example, Riccobono, J.A. School Utilization Study: Availability, Use, and Support of Instructional Media. Final Report. Washington, D.C.: Corporation for Public Broadcasting and Center for Statistics, 1985.

2 P.J. Dirr, J.H. Katz, and R.J. Pedone. Higher Education Utilization Study Phase I: Final Report. Washington, D.C.: Corporation for Public Broadcasting and Center for Statistics, March, 1981.

only at local or regional levels;³ but the current nationwide status of educational technology in our colleges and universities has been largely unknown. How and to what extent are these technologies being used? Are tomorrow's teachers being prepared to use these technologies effectively for instruction? This report summarizes results of the 1985 Higher Education Utilization Study (HEUS-85), which had as its major objective providing empirically based answers to these and many other related questions. Specifically, the major purpose of HEUS-85 is two-fold:

- o To provide current estimates of the availability, use, and support of instructional telecommunications technologies (video, audio, and computers) in the Nation's colleges and universities; and,
- o To identify and describe the availability and use patterns of these technologies in postsecondary teacher preparation programs.

B. Overview of HEUS-85

The study involved a census survey of all eligible public and private, two- and four-year postsecondary collegiate institutions included in the latest available Higher Education Directory,⁴ as well as selected graduate or professional-only schools contained in the directory. Excluded from the survey were: schools in outlying territories, central or system offices, proprietary schools, non-degree granting specialty schools, service schools other than the U.S. Academies, graduate centers for research only, divinity schools that did not offer liberal arts and sciences or teacher education programs, and closed schools as reported during the survey period. These exclusions resulted in a "study universe" of 2,830 institutions, 1,202 of which contained teacher education programs.

The HEUS-85 study objectives and research questions required that data be solicited from those individuals at each institution most knowledgeable about (1) the institution's teacher preparation program (if applicable), (2) the instructional uses of video/audio technologies, and (3) the instructional uses of computers. Separate questionnaires were constructed and pretested for each of the three respondent groups (i.e., an Instructional Video/Audio Questionnaire, a Computers for Instruction Questionnaire, and a Teacher Education Questionnaire). Copies of the final HEUS-85 institutional questionnaires appear in Appendix A.

The survey was conducted by mail questionnaire with telephone follow-up interviews of mail nonrespondents. Following prenotification of institutions to identify appropriate respondents, data were collected from January through May 1985. Final response rates for the three questionnaires were: 85 percent for Video/Audio, 86 percent for Computers, and 92 percent for Teacher Education.

3 Lewis, R.J. and R. Markwood, Instructional Applications of Information Technologies: A Survey of Higher Education in the West. Denver, Colorado: Interstate Commission for Higher Education and the Pacific Mountain Network, 1985.

4 Higher Education Publications, Incorporated, The HEP 1984 Higher Education Directory. Washington, D.C.: Author, 1984.

All members of the original study universe were initially assigned unit weights but these weights were subsequently adjusted for instrument non-response in an attempt to reduce any resulting potential bias. Adjusted weights were then used to estimate results for the total populations of institutions and teacher education programs in the nation. Additional detail on the HEUS-85 design and methodology appears in Appendix B.

C. How to Read the Tables in This Report

Most tables in this report will contain several column headings. The cell entries in the tables typically are weighted percentages (rounded to the nearest whole percent), means, or medians and are based on the group indicated in the column heading. The last row in each table includes the "estimated population size," which represents the actual or approximate number of institutions or program's nationally (depending on the particular table) that fall into each of the categories indicated by the column headings.

In most cases, the findings are presented for the total universe of institutions, as well as for different types of institutions (public, private, two-year, four-year, professional/graduate only). In examining differences by type of institution, it should be kept in mind that a strong relationship occurs between type of institution (level of offering and control) and institutional size (i.e. student enrollment); consequently, differences in study results among types of institutions may be more appropriately attributable to the underlying size differences. The relationship between size and type of institution is shown below.

<u>Type of Institution</u>	<u>Enrollment Size (No. of Students)</u>		
	<u>1-199</u>	<u>1,000-4,999</u>	<u>5,000 or more</u>
2-yr. public	15%	54%	31%
2-yr. private	85	14	1
4-yr. public	4	37	59
4-yr. private	43	47	10
Professional/graduate only	68	31	1

D. Precision of the Estimates

The HEUS-85 survey was a census of all survey-eligible institutions of higher education rather than a sample survey. If all institutions had responded, estimates given in this report would be subject only to nonsampling or measurement errors; no sampling error would occur. That is, estimates presented in this report would be true population parameters known without error, if all institutions had responded and no measurement errors were made.

Nonsampling or measurement errors can be attributed to many sources: inability to obtain information about all cases in the study; definitional difficulties; differences in the interpretation of questions by respondents; respondents' inability or unwillingness to provide correct information; mistakes in recording or coding data; and, other errors of collection.

response, processing, coverage, and estimation for missing data. These measurement errors cannot be quantified, but are almost surely quite small given the quality control procedures employed in this study. Some additional error does exist in the estimates due to nonresponse (i.e., less than 100 percent coverage of the survey respondents). However, in light of the high overall response rate to the survey questionnaires (85 to 92 percent of the universe), nonresponse errors are also likely to be small. In general, for estimates for the total population of institutions, this error will not exceed $\pm$ one percentage point, with 95 percent confidence. (Post-stratified variance estimates of proportions for the total population of eligible institutions were computed for each questionnaire. Complete details are provided in Appendix F of the Technical Report for this study.)

E. Structure of This Report

This report is organized into six major sections, including this introduction: Section II provides an overall summary of the major findings of the study; Section III considers in more detail the availability of instructional technologies and program materials, summarizing information obtained from the Computers for Instruction and Instructional Video/Audio questionnaires; Section IV deals with use of technologies for instruction, again drawing information from Computers for Instruction and Instructional Video/Audio questionnaire responses; Section V addresses questions about support for instructional technology, including financial support, support personnel and activities, and consortia membership and services; and, Section VI describes, for those institutions with Teacher Education Programs, the availability and use patterns of video, audio, and computer technologies in these programs based on information gathered with the Teacher Education Questionnaire.

Three technical appendices also are provided: Appendix A includes copies of the HEUS-85 survey instruments; Appendix B provides a summary of the HEUS-85 study design and procedures; and Appendix C lists members of the Study Advisory Committee.

II. SUMMARY OF MAJOR FINDINGS

A. Availability of Instructional Technology and Program Materials

During 1984-85, the three major types of technology under investigation in this study (computers, video, audio), were available in some form for instructional use by faculty and students in more than 90 percent of the 2,830 colleges and universities surveyed. Availability of most forms of equipment, particularly of larger or more sophisticated (and expensive) equipment, was substantially greater among two and four-year public institutions than among their typically smaller counterparts in the private sector. With regard to computers, for example, virtually all two- and four-year public institutions indicated availability, whereas almost one out of five private two-year and seven percent of private four-year institutions indicated that no computer facilities/equipment were available for faculty or student use. Moreover, where computers were available for instructional use in private schools (especially two-year private schools), it was most likely to be in the form of stand-alone microcomputers, whereas the vast majority of two- and four-year public institutions had both mainframes/minicomputers and microcomputers available for instructional purposes.

Availability of video and audio for instruction requires, minimally, signal availability and a television/radio or videocassettes/audiocassettes and appropriate playback equipment. Such availability is known to be widespread among U.S. colleges and universities and, therefore, was not assessed in this study. Instead, the investigation concentrated on the availability of various central reception/distribution facilities. The most frequently named methods of video central reception, regardless of institutional type, were community cable system drops and master TV antenna, with about one-half and one-third, respectively, of all institutions indicating availability of these facilities. For distribution/exhibition of video material, special video or film screening/projection room was the most frequently named facility for all types of institutions, followed by campus closed-circuit TV, community cable TV system, and cable TV educational access channels. For audio, central distribution was most likely through language labs and music listening rooms. As with computers, video/audio central reception and distribution facilities/equipment were substantially more available to two- and four-year public schools than to their private school counterparts.

B. Use of Instructional Technology

Each of the three major types of technology (computer, video, and audio) was used for instructional purposes by at least some faculty and students in the large majority of colleges/universities in which the technology was available. Where computers were available, the most common uses of this equipment by students were for hands-on learning about the uses of computers and for instructional use of general purpose applications software, noted by 96 percent and 92 percent of the institutions, respectively. These were also the most frequently named faculty uses of computers, among institutions with computers available. Another commonly named student use of computers (i.e., found in four out of five institutions) was programmed exercises, tutorials, and/or drills. The fastest growing area of computer use among both students and faculty, according to most institutions, was in the instructional use of general purpose applications software.

About three out of four institutions with mainframes/minicomputers available offered courses requiring students to use software or data bases installed on this equipment. Four-year institutions (81 percent) were proportionately more likely than two-year institutions (67 percent) to have offered these courses, and on the average to have offered more of these courses.

About one-fourth of the institutions with computers available for instructional use had formal policies regarding computer literacy requirements for some or all of their undergraduate students. Such policies were somewhat more likely among four-year than among two-year institutions. The most frequently specified elements of such policies (named by more than three out of four institutions) were that students should take an introductory computer course for credit and should know general procedures for using canned software. Aside from student computer literacy requirements, about 70 percent of institutions with computers had formal policies governing the use of this equipment. Access to computers by students and faculty were the most frequently named areas covered by these policies.

With regard to video and audio, this study found that the most frequent instructional use of these technologies, among all types of institutions, was for one-way presentation to students on campus. More than 80 percent of all institutions indicated such use of video and only slightly fewer institutions (75 percent) indicated such use of audio technology. About one-third of all institutions used video for one-way presentation of instruction to off-campus students; however, about half of the public two- and four-year institutions reported using video in this manner. The percentage of institutions using audio to deliver instruction to off-campus students was considerably lower (i.e., about 27 percent).

A focal point of this investigation was the extent to which institutions were offering credit and non-credit courses involving substantial use of video or audio technologies in the delivery of instructional material. A total of 902 (or 32 percent) of all eligible colleges and universities were found to have offered one or more "video telecourses" during 1984-85 and 254 (or 9 percent) of the institutions offered one or more "audio courses." Video telecourses were offered by half of all public two-year schools and 44 percent of public four-year schools; in contrast, only about 17 percent of the private four-year and 5 percent of private two-year schools offered such telecourses. Similarly, proportionately more public than private two- and four-year schools offered audio courses during 1984-85.

Overall, the 902 institutions offered a total of 10,594 video telecourses in 1984-85, for an average of 12 courses per institution. The total number of enrollments, over all courses and institutions, was 399,212. The average enrollment per school was 442 students in 12 telecourses, for an average enrollment per telecourse of about 38 students. Audio courses, although offered by only 9 percent of the institutions, totaled 3,676 in 1984-85, or an average of about 14 audio courses per school. The aggregate number of enrollments in these courses was 139,750, with an average enrollment per audio course of about 38 students. While about half of all video telecourses were used in behavioral and social science instruction, the primary use of audio courses was in teaching languages and performing arts. Moreover, the great majority of both video telecourse and audio course use was with introductory or lower division courses, with two-thirds of both types of offerings being used at this level.

This study also attempted to assess the extent to which institutions employed video and audio technologies for live or "real time" distribution of instruction to students on or off campus. The extent of such use is, of course, constrained by the availability of appropriate equipment/facilities. Nonetheless, the study found that about one out of four colleges and universities used live camera-in-the-classroom television to some extent in 1984-85. Such use was greatest among professional/graduate schools (42 percent) and proportionately higher among four-year public schools (33 percent) than among four-year private (23 percent) or two-year schools (24 percent). In terms of live, interactive use of audio, the survey found that only about 10 percent of the institutions used audio conferencing for instructional purposes during 1984-85.

C. Support for Instructional Technology

Institutional support for instructional technologies was demonstrated in several ways, including membership in consortia or cooperative arrangements with other institutions/organizations, faculty training programs and expert assistance provided by institutions, financial support or incentives for use, and other institutional policies and procedures regarding the use of technologies for instruction.

About one-third of all colleges and universities belonged to a formal or informal computer consortium during 1984-85, with greater percentages of public than private schools involved in such consortia (40 percent versus 29 percent) and, among public schools, proportionately more four-year (49 percent) than two-year (34 percent) institutions belonging to such a consortium. Estimates of video consortium membership were comparable, with 35 percent of all institutions reporting membership in video consortia during 1984-85, and proportionately more public schools (46 percent) than private schools (22 percent) indicating such membership. In contrast to computer consortia, however, higher percentages of two-year public schools (48 percent) than four-year public schools (42 percent) were members of a video consortium. Relatively few institutions (9 percent) reported membership in audio consortia and in many cases these consortia provided both video and audio services to their membership. With regard to each type of consortium, most institutions indicated having held membership for at least five years, about three-fourths indicated satisfaction with the services provided, and almost all intended to remain members for the next three years.

About two-thirds of the two- and four-year institutions offered some training for faculty in the instructional uses of computers during 1984-85, with proportionately more public than private institutions offering such training. On the average, faculty training in the use of computers offered by these institutions ran from 10 to 15 hours, and almost always involved training in the operation of equipment and of "canned" applications software. The findings related to faculty training in the use of video technologies for instruction closely paralleled those for computers, although training offered in video use was generally less extensive (i.e., typically from 2 to 7 hours in duration). In most cases, other institution faculty were responsible for conducting the faculty training in both computers and video technologies. Aside from training, more than half (57 percent) of all institutions provided organized expert assistance (e.g., special staff or faculty committees) to

III. AVAILABILITY OF INSTRUCTIONAL TECHNOLOGY

This section presents results pertaining to the availability of technological facilities/equipment and program materials for use in instruction and instructional management and assessment. Factors influencing availability/accessibility are also assessed, including amount of available equipment, location of program materials and off-campus accessibility.

A. Computers

Computers, either mainframes/minicomputers or stand-alone microcomputers, were available for instructional use by at least some faculty and/or students in the vast majority (95 percent) of our nation's colleges and universities during the 1984-85 school year. Virtually all public and 9 out of 10 private colleges and universities indicated availability of such equipment. Table 1 shows that unavailability of computers was largely restricted to the two-year private (18 percent), four-year private (7 percent), and professional/graduate institutions only (22 percent), which are typically smaller institutions in terms of student enrollment. Moreover, in these types of institutions, instructional computer availability was more likely to be in the form of stand-alone microcomputers than mainframes or minicomputers. For example, while three out of four (75 percent) of the two-year private institutions reported the availability of microcomputers, only 38 percent of these schools reported availability of the institution's mainframe or minicomputer for instructional use. On the other hand, the percentages of four-year public institutions that reported similar availability were 94 percent for mainframe/minicomputers and 91 percent for stand-alone microcomputers. Public institutions were also more likely than private institutions to report the availability of a regional public computer service for faculty and/or student instructional use, and the percentage of strictly professional/graduate schools (10 percent) making use of a commercial computer service was twice that of two- or four-year institutions. About one in four institutions also reported availability of instructional computer use through local area networks, with more than one-third (37 percent) of four-year public institutions reporting availability through such networks.

Among those institutions with computers available, most reported that the institution had more than one mainframe/minicomputer available for use by students, faculty, or administrators. As shown in Table 2, the average number of mainframes/minicomputers reported by these institutions was about 6; however, their distribution was highly positively skewed (the median was 2 and the mode was 1). Table 3 shows that student/faculty access to this equipment, using terminals from outside the institution, was possible at more than half (55 percent) of the institutions, and twice as likely for student/faculty at four-year schools (68 percent) than for those at two-year schools (34 percent).

Availability of mainframe/minicomputer equipment is, however, not in itself sufficient for effective instructional use of that equipment; software useful for instructional purposes must also be installed on the mainframe/minicomputer. Table 4 shows that 85 percent of the institutions with mainframe/minicomputers available had one or more types of instructional software installed on this equipment. Four-year institutions and professional/graduate schools were more likely to have such software available than were two-year institutions. Statistical analysis packages were the most frequently cited

faculty wanting to use computers and about three-fourths of the institutions provided such assistance to faculty wishing to use video for instructional purposes.

This study also found that about two-thirds of all colleges and universities were providing financial assistance (discount prices, loans, grants, group purchase) to students and/or faculty in buying computer hardware. Such assistance was most often offered to both faculty and students, although substantial numbers of institutions restricted such assistance to faculty only.

D. Teacher Education Programs

A major focus of this investigation was on the extent to which teacher education programs offered to and/or required of students, directly or through cooperative arrangements within the same or with another institution/organization, teacher training in the instructional uses of technologies. This study found that more than half of all programs offered some form of training in the instructional use of each major type of technology during 1984-85. Proportionately higher numbers of programs offered training in computers (84 percent) than in video (64 percent) or audio (55 percent) technologies. This was true regardless of type of program, although the larger combined undergraduate/graduate programs were most likely to have offered training in each type of technology. Strictly undergraduate programs were least likely to have offered training in computers (72 percent), whereas small combined undergraduate/graduate programs and graduate-only programs were least likely to have offered training in video technologies (about 57 percent of these programs). Only about one-third of the graduate programs and 44 percent of the small combined programs offered training in audio technologies, while about 60 percent of the larger combined programs and undergraduate programs offered such training.

About 18 percent (or 66,055) of the undergraduate students and the same percentage (or 45,591) of the graduate students participated in training programs in the instructional uses of computers which were offered by their School/Department of Education in 1985. The percentages are about the same for undergraduate students but somewhat lower for graduate students, with respect to training offered in the instructional uses of video and audio technologies; about 17 percent of the undergraduate students and only 6 to 8 percent of the graduate students were estimated to have received training in these technologies during the most recent term.

type of instructional software for all types of institutions except two-year private schools which more frequently reported the availability of data base management systems.

Unlike mainframe/minicomputers, which typically can be accessed simultaneously by many individuals for the same or different purposes, microcomputers are generally dedicated single-user machines. Consequently, the use of microcomputers for instruction at an institution may require a substantial investment in equipment, depending on the size of the institution and the extent of instructional use. Table 5 shows that most institutions with microcomputers available reported having between 11 and 50 units, with the exception of the (typically large) four-year public institutions, almost half (46 percent) of which indicated having more than 100 microcomputers.

Given the single-user nature of microcomputers and their recent proliferation in elementary and secondary schools, businesses, and (to a lesser extent) households, some educational planners/policymakers have predicted that college students, at least those majoring in certain fields, might soon be required to own or acquire a microcomputer for use in their coursework. Table 6 shows that such a requirement in 1984-85 was relatively infrequent. Almost all of the institutions indicated that no such requirement prevailed for all students, and fewer than one in ten reported having such a requirement for undergraduate students in certain fields of study. Further, of those institutions with no current policy requiring undergraduate students to own/acquire a microcomputer, less than 10 percent reported planning/considering adoption of such a policy (Table 7).

When asked if the institution had a central collection or collections containing software documentation, about two-thirds (64 percent) of the institutions with mainframes/minicomputers indicated that they did have such central collections (Table 8); and four-year institutions were substantially more likely to have such collections (71 percent) than were two-year institutions (54 percent). As shown in Table 9, the large majority (93 percent) of institutions also housed microcomputer software in central collections. Word processing and business applications software were the most frequently noted types of micro software by all types of institutions; however, statistical analysis packages for micros were also relatively prevalent and more likely to be found in four-year institutions (50 percent) than in two-year institutions (37 percent).

Institutional respondents with computers available were asked to indicate the most important computer-related need for their students, faculty, and administrators. Table 10 shows that the perceived most important need of students was "more work stations or terminals," with about half (54 percent) of all institutions reporting this need. This student need was the most frequently noted by respondents, regardless of type of institution. About one out of three institutions mentioned "more computer software" as the most important student need, with substantially more two-year than four-year institutions reporting this need. These two needs were also the most frequently reported for faculty (Table 11) and administrators (Table 12); however, for both groups, more computer software was more frequently mentioned as the most important need by two-year institutions; whereas, more work stations or terminals was more frequently mentioned by four-year institutions. Interestingly, in comparison to reported student and faculty needs, substantially

higher percentages of institutions, regardless of type, reported "more storage capacity" as the most important computer-related need for administrators (Table 12).

Most institutions (72 percent) indicated that, in the past three years, they have diverted many computer activities from mainframes/minicomputers to stand-alone microcomputers (Table 13). About one-third of the institutions indicated a similar shift away from reliance on one mainframe/minicomputer to use of several mainframe/minis. Such shifts were less likely to have occurred in private than in public institutions, with proportionately more of the former reporting that computer resource configuration has remained stable over the past three years.

B. Video and Audio

Signal availability, for both video/television and audio/radio, is known to be almost universal among U.S. colleges and universities and, therefore, was not assessed in the present survey. Respondents were asked, however, to indicate the various video central reception facilities that were available at their institutions. The most frequently named methods of video central reception for all types of schools were "community cable system drops" and "master TV antenna" with about one-half and one-third, respectively, of all institutions indicating availability of these facilities (Table 14). Satellite receive-only dishes (fixed or rotatable) were available in only about one out of ten institutions, and ITFS or other microwave reception equipment was available in about 7 percent of all institutions. Once again, two- and four-year public institutions were more likely than their counterparts in the private sector to have each of these facilities available. In fact, the percentage of private institutions with none of these video reception facilities (43 percent) was more than twice that of public schools (19 percent).

Findings were similar with regard to video distribution facilities (Table 15), except that the most frequently available facility for all types of institutions was a "special video or film screening/projection room." While availability was generally more likely in public than in private institutions, about one-third of all institutions indicated availability of campus closed-circuit TV, buildings wired by community cable TV system, and/or community cable TV system educational/access channels. ITFS transmission equipment and non-commercial TV broadcast stations were available in less than 10 percent of the institutions, except for four-year public schools where availability of such facilities was somewhat higher.

The most frequently available audio distribution facilities, present in more than half of all institutions, were language labs and music listening rooms (Table 16). Substantially higher percentages of four-year institutions (38 percent) had use of non-commercial radio broadcast stations than did two-year institutions (13 percent), and about half (51 percent) of all four-year public institutions indicated availability of such a broadcast station. Audio conferencing facilities and music/speech synthesizers were available in only about 15 percent of the institutions.

Distribution of video/audio instructional material does not, of course, require the existence of these central distribution/exhibition facilities. As

IV. USES OF INSTRUCTIONAL TECHNOLOGIES

A. Use of Computers

1. Overall Use By Students, Faculty, and Administrators

Computers (mainframes/minicomputers or stand-alone microcomputers) can be and are being used for a wide variety of instructional purposes. Institutional respondents in schools with computers available were asked to indicate the major educational purposes for which students, faculty, and administrators at their institutions used computers. Table 18 shows that the most common use by students was hands-on learning about the use of computers (noted by 96 percent of the institutions), followed closely by instructional use of general purpose applications software (92 percent). Student use of programmed exercises/tutorials also was named by four out of five institutions. Although use of computers by students for control of laboratory instruments/apparatus and for research and bibliographic purposes was noted by about half of all institutions with computers available, these student uses were far more likely to be found in four-year and professional/graduate schools than in two-year institutions.

The findings regarding faculty use of computers are quite similar to those for students, although administrative use of general and special-purpose software by faculty was almost as common as was their instructional use of such software, and only slightly less common than such use by institutional administrators.

The fastest growing areas of computer use by students, faculty, and administrators (see Tables 19 through 21) corresponded closely to those areas with the greatest frequency of use by these groups. It is interesting to note, however, that instructional use of general purpose applications software was reported by substantially greater numbers of schools as the fastest growing student and faculty use of computers than was hands-on use in learning about computers. Perhaps even more notable is the fact that only about 10 percent of the institutions named programmed exercises/tutorials as the fastest growing student use.

About 93 percent of all institutions had one or more administrative systems computerized during the 1984-85 school year (Table 22). More than nine out of ten two- and four-year public schools had computerized systems for handling student grade records and only slightly fewer of these institutions had such systems for payroll and course offerings. While the percentages of private schools with computerized systems for these administrative functions was considerably smaller, Table 23 shows that such systems were scheduled to be in place by the following year in roughly three out of four of these private institutions.

In light of the rather widespread use of computers for several administrative functions in postsecondary institutions, it is not surprising that an estimated 40 percent of all computer use in these institutions was for administrative purposes (Table 24). Nonetheless, the predominant use of computers in all institutions, except strictly professional/graduate schools, was instructional. This is especially true in two-year schools where almost all non-administrative computer use was instructional, while in four-year institutions a significant proportion of total computer use (14 percent) was for research.

shown in Table 17, more than nine out of ten institutions indicated the presence of instructional materials centers for housing video or audio program materials. While the great majority of institutions kept videocassettes/tapes (90 percent) and audiocassettes/tapes (83 percent) in such centers, it is interesting to note that about 15 percent of both two- and four-year institutions also reported keeping interactive videodisc packages (with computer software) in these centers.

2. Use of Computers with Peripherals

This survey also attempted to assess the extent to which available computer equipment (mainframes/minicomputers and microcomputers) was being used in conjunction with various video and audio peripherals. Respondents indicated that the majority of institutions did not use any particular peripheral, either with mainframes/minicomputers (Table 25) or with microcomputers (Table 26). Graphics peripherals (e.g., plotters, image digitizers) were the most frequently used type among all institutions, both with mainframes/minicomputers and with microcomputers. In general, peripherals were more likely to be used with microcomputers than with mainframes/minicomputers, probably because of the cost-free nature of microcomputer use as compared to the typical cost-sharing associated with mainframe/minicomputer use. In fact, Table 25 shows that, with the exception of graphic peripherals, no video or audio peripheral was being used with mainframes/minicomputers at more than 5 percent of the institutions. In contrast, where microcomputers were available, about one in five institutions was using the equipment with music synthesizers; and 13 percent were using micros with voice synthesizers and/or with videocassette recorders or linear access videodisc players (Table 26).

3. Course Offerings Requiring Computer Use

About 75 percent of the institutions with mainframes/minicomputers available offered courses in which students were asked to use software or data bases that were installed on that equipment (Table 27). These course offerings were related to institutional level of offering, with 81 percent of four-year schools as compared to 67 percent of two-year institutions offering such courses. The number of courses offered also was related to institutional level of offering, with four-year institutions offering, on the average, 20 such courses compared to an average of 7 courses offered at two-year institutions (Table 28).

4. Institutional Policies Regarding Computer Use

About one in four of the institutions with computers available indicated having a formal computer literacy policy for some or all of their undergraduate students; 12 percent of the institutions with computers indicated such a policy for all undergraduate students while another 15 percent indicated computer literacy requirements only for students majoring in certain disciplines (Table 29). Four-year institutions (30 percent) were somewhat more likely to have formal computer literacy policies for some or all students than were two-year institutions (22 percent).

Where formal computer literacy requirements were restricted to certain academic disciplines, the most frequently named fields of study with such requirements were, in order, computer science, business, engineering, and mathematics (Table 30). It may be important to note that the next most frequently named area of study was education, named by one of three institutions with computer literacy policies targeted only at certain fields of study.

Institutions with formal computer literacy policies for some or all of their undergraduate students were asked to indicate the elements comprising that policy. Table 31 shows that the most frequently named element, regardless of institutional type, was that students should take an introductory

computer course for credit. The second most commonly noted element of computer literacy policies, named by about three out of four institutions with such policies, was that students should know general procedures for using canned software. About two-thirds of the institutions indicated that their computer literacy policy required that students know what problems are and are not amenable to computer solution, and almost as many institutions required that students be familiar with the ethical issues (e.g., data privacy, copyrights) associated with computer use.

Aside from computer literacy policies, about seven out of ten institutions with computers available indicated that they had some formal policy or policies governing "use" of computers (Table 32). Access to computers by students and faculty was the most frequently named area covered by these policies (noted by 60 percent of the institutions). About one-third of the institutions also indicated that their formal policies covered duplication of copyrighted software and a similar number of institutions indicated that data security (loss prevention, safeguards against intrusion) issues were covered by such a policy.

B. Use of Video/Audio Technologies

Some of the current findings pertaining to the use of video technology may be compared to findings from the 1979 Higher Education Utilization Study.⁵ Where possible and appropriate, such comparisons will be made, and the differences between the 1979 and 1985 estimates will be noted in this section.

1. General Uses of Video/Audio

In 1984-85 the most frequent use of video among all types of institutions was for one-way presentation of instruction to on-campus students (Table 33). Use of video for presentation of instruction to off-campus students was proportionately higher for two- and four-year public institutions (about 50 percent) than for their private school counterparts (i.e., 10 percent of two-year private schools and 19 percent of four-year private schools). Institutional estimates of off-campus instructional use are consistent with results obtained in 1979; however, the percentages of two-year and four-year private institutions indicating use for on-campus instruction have increased about 5 percent since 1979. About one in four institutions had also employed a relatively new instructional use of video technology: pictorial enhancement of interactive programmed instruction using computers.

With regard to non-instructional uses of video, public institutions were more likely than private institutions to use video for counseling, outreach, promotion/recruitment, and staff development. The use of video for each of these non-instructional purposes had increased dramatically (i.e., by 10 percent or more) among all types of institutions, especially four-year private schools, since 1979.

The findings regarding the uses of audio correspond to those for video use, although the percentages of institutions indicating uses of audio were generally somewhat lower (see Table 34). One difference stands out, however: whereas proportionately more two-year public schools (80 percent) than two-year private schools (68 percent) used audio for one-way instructional

5 Dirr, Katz, and Pedone, op. cit.

presentation to on-campus students, the situation was just the reverse in four-year schools (i.e., 75 percent of private and 69 percent of public institutions used audio for this purpose). Instructional use for on-campus students was the most common use of audio technology for all types of institutions.

While audio was used somewhat less frequently than video by institutions as a vehicle for presentation of instruction to off-campus students, it was used more frequently than video for conferencing or two-way communications between faculty and off-campus students. Even so, only about one in ten institutions indicated using audio for such purposes.

As with the use of video, public institutions were more likely than private institutions, regardless of level of offering, to use audio for non-instructional purposes, including counseling, outreach, promotion/recruitment, and staff development.

2. Video Telecourses and Audio Courses⁶

A total of 902 (32 percent) institutions offered one or more video telecourses during 1984-85 and 254 (9 percent) of the institutions offered one or more audio courses. Video telecourses were offered by half of all two-year public schools and by 44 percent of the four-year public schools; in contrast, 17 percent of the private four-year and only 5 percent of the private two-year schools offered such courses (Table 35). While the differences are not as dramatic for audio courses, proportionately more public than private two- and four-year institutions also were offering these courses (Table 36).

The aggregate number of video telecourses offered over all institutions was 10,594, with almost half of these courses being offered by two-year public schools (Table 37). Among those institutions offering video telecourses, the average number of courses offered per school was about 12. Two-year private schools, on average, offered substantially fewer courses (about 2 per school), while professional/graduate schools typically offered many more (about 34 courses per school).

The total number of enrollments in video telecourses, over all schools, was 399,212, with nearly 90 percent of these enrollments in two- and four-year public institutions. The average enrollment per school offering video telecourses was 442 in 12 courses, for an average enrollment per course of about 38 students (and ranging from 9 students per telecourse in professional/graduate schools to 54 students per telecourse in four-year public institutions).

6 These terms were defined for respondents to the Instructional Video/Audio Questionnaire as follows:

Video Telecourse-Refers to credit or non-credit courses in which instruction makes substantial use of video technologies. A telecourse may or may not also involve substantial use of text books or other print materials and regular student communication with an instructor.

Audio Course-Refers to credit or non-credit courses in which instruction makes substantial use of audio technologies. An audio course may or may not also involve substantial use of text books or other print materials and regular student communication with an instructor.

These 1984-85 estimates for video telecourses represent interesting and significant changes from the estimates obtained in the 1979 survey. First of all, there has been a substantial increase in the percentage of institutions offering video telecourses (from 25 percent in 1979 to 32 percent in 1985 or a net increase of 167 institutions). The estimated aggregate number of institutions offering telecourses had increased from 735 in 1979 to 902 in 1985, and the estimated aggregate number of telecourses offered increased from 6,884 to 10,594. On the other hand, while the average number of telecourses offered per institution had increased from 9 to 12 over the six-year period, the average enrollment in these courses had declined (from 75 students per course in 1979 to 38 students per course in 1985).

Table 38 presents comparable estimates of course offerings and enrollments for audio courses. The total number of audio courses offered by the 254 institutions offering courses was 3,676, or an average of about 14 audio course offerings per school. In contrast to video telecourse offerings (where most such offerings were in public schools), the majority of audio course offerings were in four-year private institutions, which on average offered two to three times as many such courses as did two-year or public four-year institutions. However, the average enrollment per audio course in these (four-year private) institutions was 22, which was substantially smaller than the average across all schools (i.e., 38 students per course), and far below the average of 112 students per course for four-year public schools. The aggregate number of enrollments in audio courses offered by all 254 institutions was 139,750.

Table 39 lists the titles of the 25 most widely used video telecourses during the 1984-85 school year, based on the total number of institutions indicating use of these telecourses. Table 40 presents a similar listing of video telecourses, based on total student enrollments over all institutions reporting use of these telecourses. It is interesting to note the high degree of correspondence⁷ between the two listings, with 20 of the 25 titles appearing in both listings.

To some extent, the use of video telecourses and audio courses differed according to instructional subject area. About half of all video telecourses were used in behavioral or social science instruction, whereas the primary use of audio courses was (not surprisingly) in teaching languages and performing arts (see Table 41). In terms of level of course offering, the great majority of video telecourse and audio course use was with introductory level or lower division courses, with two-thirds or more of both types of offerings being used at this level (see Table 42).

7 Because of the high nonresponse and other coding difficulties associated with the telecourse listing items, estimates of the actual numbers of institutions and enrollments for individual telecourses could not be adequately determined. Also, for these reasons, some minor discrepancies may exist in the rankings presented in Tables 39 and 40 (i.e., the true rank ordering may differ slightly from that presented). While the same data problems existed for audio course titles and enrollments, most reported audio courses were local productions and typically only subject area was noted by the respondents; consequently, similar listings of audio courses could not be compiled.

Public television stations were the most common distribution outlet for video telecourses offered by two- and four-year public institutions and were also used by about one-third of the private institutions offering such courses (Table 43). Pre-recorded videocassette or videodisc was the most frequently used distribution procedure among four-year private institutions, and proportionately more of these institutions (66 percent) used this method than did two-year institutions (56 percent) or four-year public institutions (53 percent). Proportionately more public institutions, especially two-year, reported using cable television to distribute video telecourses.

Regardless of type of institution, audio courses were most frequently distributed through pre-recorded audiocassette or records. About two-thirds (63 percent) of the two-year institutions and four-fifths (83 percent) of the four-year institutions distributed audio courses by cassettes or records (Table 44). Public radio stations also were used by substantial numbers of public two-year (19 percent) and four-year (29 percent) institutions.

Two-year schools were more likely than four-year schools to schedule video telecourses and/or audio courses at times outside of the institution's normal hours of instruction. Table 45 shows that 73 percent of the two-year schools and 57 percent of the four-year schools employed "special" schedules for their video telecourse offerings; the corresponding percentages for audio course offerings were 50 percent and 32 percent, respectively, for two-year and four-year institutions (Table 46).

With the exception of four-year private institutions, most institutions offered at least some video telecourses as an alternative to parallel non-mediated courses which were offered for the same subjects and levels (Table 47). Proportionately more two-year institutions (85 percent) offered such choices among parallel courses than did four-year institutions (59 percent). These variations by types of school were similarly observed for schools offering audio courses (Table 48), although proportionately fewer schools of all types reported offering parallel non-audio courses for the same subjects and levels.

Finally, almost all of the institutions offering video telecourses and/or audio courses during 1984-85 had, at least for some of these courses, individual instructors who were assigned responsibility for the courses and with whom students could interact on a regular basis. In fact, this was the procedure for every course offered in 90 percent of the two-year institutions and 85 percent of the four-year institutions offering such mediated courses (Table 49). The primary means of communication between students and faculty responsible for video telecourses or audio courses at public two- and four-year institutions was telephone and/or in-person, whereas about two-thirds of the private schools indicated that in-person meetings were the primary means of student-faculty interaction (Table 50).

3. Live, Interactive Use of Video/Audio

With the appropriate facilities/equipment, live or "real time" distribution of instruction is possible via both video and audio. The institutional availability of such equipment (e.g., closed-circuit TV, ITFS transmission equipment, audio conferencing facilities) was discussed previously in Section III. This survey also assessed the nature and extent to which institutions were using such technology for instructional purposes.

Table 51 shows that about one out of four colleges and universities used live, camera-in-the-classroom television to some extent in 1984-85. Use was greatest among professional/graduate schools (42 percent), and proportionately higher among four-year public schools (33 percent) than among four-year private (23 percent) or two-year schools (24 percent). These differences corresponded to differences in availability of appropriate equipment among the institutions.

It was not possible to make precise estimates regarding the types of student-faculty interaction typically allowed in live camera-in-the-classroom television instruction, since significant proportions of institutional respondents indicated "don't know" to such inquiries (see Table 52). Nonetheless, it appears quite likely that more than half (and probably as many as two-thirds) of the institutions offering such instruction allowed for some form of simultaneous student-faculty interaction with this instruction. Simultaneous audio and video was the most frequent form of student-faculty interaction used by all types of institutions offering such instruction. This is not surprising since Table 53 shows that in most of the institutions offering live, camera-in-the-classroom instruction (two-thirds or more), both the students and the on-camera instructor were located within the institution.

Only about one in ten institutions used audio conferencing for instructional purposes during 1984-85, although proportionately greater numbers (20 percent) of four-year public institutions reported using such facilities/equipment for instruction (Table 54). Here again, these findings corresponded to the institutional availability of appropriate technology, which was generally unavailable in most colleges and universities. Audio conferencing was most often not used with other interactive media (Table 55), although about one-quarter of the institutions using audio conferencing indicated that it was typically used with visuals (e.g., electronic blackboard, facsimile transmission).

V. SUPPORT FOR INSTRUCTIONAL TECHNOLOGY

This section examines various aspects of institutional support for instructional use of each of the three major types of technology, including: (1) consortium memberships as well as services provided by and satisfaction with consortia; (2) faculty training and other expert assistance provided by institutions to facilitate instructional use of technology; (3) institutional policies/procedures and incentives relating to use of technologies; (4) decisionmaking responsibility; and (5) expectations regarding future use and financial support.

A. Consortium Membership

About one-third of all colleges and universities belonged to a computer consortium during 1984-85. Greater percentages of public than private schools were members of computer consortia (40 percent versus 29 percent); and, among public schools, proportionately more four-year (49 percent) than two-year (34 percent) institutions belonged to such consortia (see Table 56). Most schools had been members of the consortium for at least five years (Table 57) and, while three-fourths of these institutions reported satisfaction with the services provided (Table 58), almost all (95 percent) indicated that they planned to retain membership in the consortium for the next three years (Table 59).

The services provided by computer consortia typically involved group hardware and software purchases, software evaluation, and distribution, training services, and a number of others (Table 60). Interestingly, the most frequently named service by four-year public institutions (60 percent) was large mainframe access, which was indicated by about one-third of the four-year private and two-year schools.

Institutional membership in video consortia (Table 61) was comparable to that for computers, with 35 percent of all institutions reporting such formal or informal arrangements for video in 1984-85. This represents a slight increase from the 28 percent found in 1979. Proportionately greater numbers of public schools (46 percent) than private schools (22 percent) indicated membership. However, in contrast to computer consortia, higher percentages of two-year public institutions (48 percent) than four-year public institutions (42 percent) were members of a video consortium. Relatively few institutions (9 percent) reported membership in an audio consortium (Table 62), and many of these consortia provided both video and audio services to their membership.

As in the case of computer consortia, most institutions had held membership in the video consortium for five years or longer (Table 63), about three-fourths of these institutions (72 percent) indicated satisfaction with the services provided (Table 64), and almost all (98 percent) intended to remain members for the next three years (Table 65).

The most frequently named service provided by video consortia was group buying/acquisition of program rights, which was noted by 78 percent of the two-year schools and 60 percent of the four-year schools (Table 66). Other

8 For this study, "consortium" was defined as any formal or informal cooperative arrangement of colleges/organizations offering, producing, or sharing services or materials.

services frequently named by these institutions were television program previews (especially likely for two-year schools) and television program exchange (named by about half of both two- and four-year schools).

B. Training and Expert Assistance

1. Computers

Lack of training or expert assistance has been cited as a major barrier to effective faculty use of computers for instruction. This study found that 63 percent of the two- and four-year institutions offered some training for faculty in the instructional use of computers during 1984-85, with proportionately more public (67 percent) than private (57 percent) institutions offering such training (Table 67). The training offered by these institutions almost always involved training in the operation of equipment and of "canned" applications software; other types of training were far less likely to have been provided (Table 68).

Almost four out of five institutions reported that other institutional faculty conducted some or all of the faculty training in computers. While this was the most common resource used in two-year institutions (85 percent) and four-year private institutions (75 percent), public four-year institutions were even more likely (79 percent) to employ other institutional staff for such training (Table 69). About one out of five institutions involved user groups from within the institution and/or the equipment manufacturer's representatives in the faculty training. On the average, faculty training in computers offered by institutions typically ran from 10 to 15 hours, regardless of type of institution (Table 70).

Aside from offering specific training for faculty, more than half (57 percent) of all institutions provided organized expert assistance (e.g., special staff or faculty committees) to faculty who wished to use computers for instructional purposes (Table 71). Proportionately more four-year public institutions (72 percent) provided such expert assistance than did four-year private or two-year institutions (about 55 percent). Again, the most frequently provided type of expert assistance, by all institutions, was in the operation of equipment, followed by assistance in software evaluation.

2. Video

The findings relating to faculty training in the use of video technologies for instruction paralleled those described above for computers, although institutional training offered to faculty in video use was generally somewhat less extensive. Table 72 shows that 55 percent of all institutions offered formal structured training to faculty in the use of video technologies and another 5 percent offered informal training. The percentage of institutions offering either formal or informal training in the use of video was substantially higher for two- and four-year public institutions (about 70 percent) than for private four-year (55 percent) or two-year (29 percent) institutions.

Regardless of type of institution, offerings of faculty training in the use of video technology were typically of rather short duration, from 2 to 7 hours on the average (Table 73), and most frequently (in about 9 out of 10

institutions) involved training in the operation of equipment (Table 74). From one-third to one-half of the institutions also reported one or more other elements of faculty training of video for instruction, including program design/production, program selection, and integration of video use with curriculum content and/or instructional methods.

Beyond training, three out of four institutions provided some organized expert assistance to faculty wanting to use video for instructional purposes (Table 75). As in the case of computers, such assistance was most likely to be available to faculty in public four-year institutions (83 percent) and least likely to be found in private two-year schools (51 percent). Where expert assistance was available, it was most likely to take the form of technical assistance in the operation of equipment (95 percent of institutions); however, more than half of these institutions also provided assistance to faculty in the acquisition of rights to use programs and/or in the evaluation of program materials.

C. Institutional Policies and Procedures

Providing ready access to computer equipment for all faculty and students desiring such access is a formidable problem for most institutions. Consequently, many institutions were offering assistance, either directly or through arrangements with outside vendors, to faculty and/or students in buying computer hardware. Where offered, this assistance took the form of discount prices, loans, grants, or group purchase arrangements. Table 76 shows that two-thirds of all colleges and universities were providing such financial assistance to students and/or faculty in 1984-85. Almost four out of five public four-year institutions were providing assistance in hardware purchasing, while about half of all other institutions provided this assistance. Such assistance was most often offered to both faculty and students, although substantial numbers of institutions restricted assistance to faculty only.

While a number of institutions offered special incentives to faculty for developing new computer programs, this was still the exception rather than the rule in 1984-85. As Table 77 shows, only 27 percent of colleges/universities offered such incentives. Where offered, incentives most often involved institutional assistance in contract/grant applications and/or clerical support. Two-year institutions were more likely to offer reduced teaching loads for faculty, whereas four-year institutions were more likely to offer faculty share in the royalties and/or allow faculty to retain rights to programs that they develop.

About half of the institutions offering video telecourses reported that they received either discounted or free program time for distributing these courses from a broadcast or cable outlet (Table 78). In the great majority of cases, free time was provided through community cable access channels. In contrast, only 15 percent of those institutions offering audio courses indicated that free or discounted broadcast time was provided for those courses (Table 79).

The great majority of institutions indicated that tuition and fees for both video telecourses and audio courses were generally about the same as those charged for non-media courses. However, of the remaining institutions, greater percentages indicated that video telecourses were more costly (Table 80) and audio courses were generally less costly (Table 81).

While about half of the institutions offering mediated courses (video or audio) publicized these offerings for students by explicitly identifying them as such in the institution's catalog or schedule of courses (Table 82), this was somewhat more likely to be the procedure in two-year schools (63 percent) than in four-year schools (39 percent). Although relatively few of the institutions (15 percent) made any effort to distinguish between credits earned from mediated courses (video or audio) and credits earned through traditional non-media courses on students' transcripts, about twice the percentage of four-year schools (22 percent) as two-year schools (11 percent) did record this distinction (Table 83).

More than four out of five colleges and universities had no special policy regarding the transfer of video telecourse or audio course credits earned elsewhere (Tables 84 and 85). However, while less than 10 percent of the public two- and four-year schools did not normally accept credits earned elsewhere through mediated courses, about 25 percent of the private two- and four-year schools and almost half of the professional/graduate schools indicated such a policy restricting the transfer of telecourse credits. Interestingly, only about 4 percent of all institutions, regardless of type, reported existence of a policy restricting the use of telecourse credits for a student's major field of study (Tables 86 and 87).

D. Decisionmaking Responsibility

Other indications of institutional commitment to, and support of, instructional technology may be found in the existence of individuals or groups whose assigned role is planning and/or needs assessment with regard to institutional uses of these technologies and in the loci of decisionmaking on areas relevant to instructional technology acquisition/utilization.

In 1984-85, about two-thirds of all institutions had a task force, study group, or individual administrator designated to look into the best uses and necessary technical facilities for use of audio, video, and computers for instructional purposes (Table 88). While no attempt was made to assess the stature or decisionmaking authority of these individuals/groups at the institutions, their existence suggests an awareness and concern by the majority of institutions about current and potential instructional applications involving the integration of these technologies.

1. Computers

Table 89 shows the individuals/staff with primary responsibility for institutional decisionmaking with regard to various aspects of computer acquisition and use. Examination of this table reveals some interesting patterns of responsibility across institutions. First of all, it appears that Boards of Trustees seldom assumed primary responsibility for any computer-related decisions made by the institutions. Decisions regarding the acquisition of mainframe/minicomputer hardware and the establishment of charges for use of such equipment were most likely to be made by the institution's Administrative Officer, whereas the Academic Officer was most likely to be the person responsible for planning faculty training in instructional computer use or for establishing any special incentives for faculty who develop programs. Decisions regarding the selection of microcomputer hardware and course-specific or microcomputer software selection were typically relegated to

departmental level personnel (i.e., department head, faculty). Most typically, computer center staff were responsible for representing the institution in consortium matters and in selecting general use software for the institution's mainframes/minicomputers.

2. Video/Audio

The pattern of decisionmaking responsibility for video/audio technologies is shown in Table 90. As can be seen the decisionmaking structure in institutions for video/audio was quite different than that which was observed for computers. The most striking difference is that decisions regarding video/audio were far more likely to involve the institution's academic officer and less likely to be made by departmental level staff. The Academic Officer was the most frequently named locus of decisionmaking for all matters related to mediated courses including determining telecourse offerings, assigning faculty to telecourses, establishing budgets for telecourses, determining telecourse requirements on transferability, and representing the institution in video/audio consortium decisionmaking. Only in the matter of establishing student tuition and fees for telecourses was the Board of Trustees likely to have assumed responsibility rather than the Academic Officer. Other areas of decisionmaking were more likely to be the responsibility of specialized audio/video staff, including planning faculty training, budgeting for video/audio equipment purchase, selection of equipment, and location of/access to video/audio equipment.

E. Future Plans/Expectations Regarding Use and Support

Unfortunately, a substantial number of survey respondents answered "don't know" to inquiries regarding future funding and expenditures for computers, video, and audio technologies. Nonetheless, some useful information was obtained from the majority of respondents to these questions.

1. Computers

Table 91 shows that most respondents expected institutional funding for computers from all sources to remain the same or increase over the next two years. Similarly, the majority of institutions reported expectations that computer-related expenditures, particularly for software, would increase over the next two years (Table 92).

2. Video

While more institutions expected video/audio funding from all sources to increase rather than decrease over the next two years, the majority of institutions expected video/audio funding to remain about the same (Table 93). This finding is somewhat inconsistent with institutions' two-year expectations regarding video/audio expenditures (as shown in Table 94); proportionately more institutions expected expenditures for video equipment/program materials to increase over the next two years than expected such expenditures to remain the same. Just the reverse was found with regard to audio expenditures.

About one-third of all institutions planned to expand the on-campus use of video telecourses over the next two years, and one-fourth of the institutions expected to expand off-campus use of telecourses (Table 95). Proportionately

more two-year schools than four-year schools indicated plans for both on-campus and off-campus expansion of video telecourses. About two-thirds of the institutions offering video telecourses during 1984-85, regardless of type of institution, expected their enrollments in these courses to increase over the next two years (Table 96).

3. Audio

Institutions' expectations regarding the expansion of audio courses and audio course enrollments were somewhat lower. As shown in Table 97, 80 percent or more of all institutions expected the use of audio courses (both on- and off-campus) at their institution to remain about the same over the next two years, although about half of the institutions currently offering audio courses expected enrollments in such courses to increase during this period (Table 98).

VI. TEACHER EDUCATION AND INSTRUCTIONAL TECHNOLOGIES

A. General

As noted in Section I, this study included a separate census survey of all teacher education programs in the United States, as indicated by the 1983-84 Higher Education Directory and subsequently verified during the survey. In all, 1,202 programs (Schools or Departments of Education) were identified as eligible for the survey, 92 percent of which provided responses to the Teacher Education Questionnaire. The questionnaire solicited information, for each of the three major types of technology, about the availability/accessibility of equipment and program materials, the kinds of training in the uses of technologies offered or required by programs, the nature and extent of training offered/required, the number of students receiving such training, personnel/agencies responsible for training, and future plans for training in technology.

It should be noted that the questionnaire attempted to identify and distinguish among three groups of teacher education students--undergraduate students, pre-service graduate students, and in-service graduate students--with respect to program offerings/requirements and numbers of students participating in various program elements. Unfortunately, however, a substantial number of programs found it difficult or impossible to make such distinctions for pre-service and in-service graduate students. Consequently, it was necessary to aggregate these groups for analysis and, therefore, results in this section are reported for graduate students in general.

Findings in this section are provided for the total population of teacher education programs and, separately, for different types of programs. Three types of programs were identified, based on reported program offerings: (1) undergraduate programs only (representing 41 percent of all programs); (2) combined undergraduate and graduate programs (57 percent of total); and (3) graduate programs only (2 percent of total). The great majority of undergraduate and graduate-only programs have total student enrollments of 500 or less, which is the median enrollment size of the combined undergraduate and graduate programs. Therefore, to allow for interpretation of differences related to size as well as type of program, the combined undergraduate/graduate programs were subdivided into small programs (enrollment less than 500) and large programs (enrollment of 500 or more) and the results reported separately for these programs as well.

B. Availability of Equipment and Program Materials

Availability of technologies (equipment and program materials) at the institutional level, as assessed in Section III of this report, does not necessarily reflect availability and accessibility by all departments/program areas. Consequently, this study also attempted to assess both the availability and accessibility of various kinds of technological equipment and program materials among Schools/Departments of Education. Respondents were asked to indicate whether each type of equipment was available and readily accessible (i.e., can generally be used when needed), available but not readily accessible, or not available. For clarity of presentation, Table 99 shows the percentages of programs reporting availability of equipment, regardless of whether or not it is readily accessible (which in any event may reflect a subjective assessment by the particular respondent). As can be seen

offered such training, followed in order by graduate-only programs (91 percent), small combined undergraduate/graduate programs (87 percent), and undergraduate-only programs (72 percent).

Schools/Departments of Education offering training in computers were asked to note all of the types of training offered by their programs. Training in the operation of equipment emerged as the most consistently mentioned type of offering by all types of programs, except graduate-only programs (93 percent of which also indicated offering such training). As shown in Table 102, offerings of most other types of training in instructional computer use also were widespread (i.e., offered by 70 percent or more of programs), with the exception of training in the management of multiple small groups of students (noted by about half of the programs) and training in the use of computers for interactive controls of video/audio materials (named by about 30 percent of all institutions).

A good indication of the importance attributed to such training may be inferred from the extent to which the training provided was a requirement for students in these programs. While training in the operation of equipment was offered by more than 9 out of 10 programs that offered training in computers, it was a requirement for students in only about half of these programs. Other types of training in computers were even less likely to be required for students (Table 103). In general, most types of training were more likely to be required of students in undergraduate-only programs than in combined undergraduate/graduate programs.

Training in the instructional uses of computers may be provided in a variety of forms. Such training was provided as a separate full course in more than four out of five of the combined undergraduate/graduate and graduate-only programs, and as a module or modules within an education course in about two-thirds of these programs (Table 104). Undergraduate-only programs were more likely to offer such training as modules within an education course (66 percent) than as a separate full course (58 percent). Proportionately more of the graduate-only programs (81 percent) and large combined undergraduate/graduate programs (76 percent) reported offering training in the form of workshops than did the small combined programs (55 percent) or undergraduate-only programs (34 percent). Summer institutes were the least likely format for such training among all types of programs, although more than half (56 percent) of the larger combined undergraduate/graduate programs reported training was provided through these institutions.

About 85 percent of all programs reported that School/Department of Education faculty conducted the training of students in the instructional uses of computers (Table 105). About half of the programs used computer service faculty for such training, with proportionately more of the undergraduate only programs (59 percent) reporting use of this resource. Relatively few programs reported that such training was provided by resources from outside their institution (i.e., school district personnel, consultants, private industry, vendors).

Among those programs offering training, about 57 percent indicated that some training in the instructional uses of computers was required of at least some of their pre-service students, with proportionately more of the undergraduate-only programs (63 percent) reporting such requirements (Table 106).

from Table 99, more than 9 out of 10 Schools/Departments of Education, regardless of program type, reported availability of television sets, video-cassettes/videotape recorders, video cameras, audiocassette/tape recorders, record players, and microcomputers. Although not shown in the table, the great majority of these programs also indicated that this equipment was "readily accessible." Word processors and terminals connected to mainframes/minicomputers were available at 84 percent and 76 percent of the teacher preparation programs, respectively, and, in most cases, were readily accessible at these programs. On the other hand, audio conferencing facilities, local area networks, interactive videodisc players, videotex terminals, and teletext converters, were available to one-third or fewer programs and were proportionately more likely to be "not readily accessible" to these programs.

Availability/accessibility of equipment was found to be related to type and size of program. In general, availability/accessibility of all types of equipment was more likely for programs with both undergraduate and graduate offerings than for undergraduate programs only and, within combined undergraduate/graduate schools or departments, more likely for large programs than for small programs. For example, terminals connected to mainframes/minicomputers were available at proportionately more large combined programs (90 percent) than small combined programs (77 percent) which, in turn, were more likely to have such equipment than were undergraduate programs only (65 percent).

More than 9 out of 10 Schools/Departments of Education also had an instructional materials center or other central collection of audio, video, and/or computer programs/materials (Table 100). The percentages of teacher education programs with various program materials available in instructional materials centers corresponded closely to the availability of equipment required for the use of such materials. Thus, for example, the most frequently named contents of such central collections were videocassettes/tapes and audiocassettes/tapes, available in about four-fifths and three-fourths, respectively, of all Schools/Departments of Education. Each of the major types of microcomputer software were available in half or more of the Schools/Departments, with almost three out of four programs indicating availability of instructional courseware and word processing software for microcomputers. In contrast, only about one-third of the programs kept mainframe software documentation in an instructional materials center. As with the availability of equipment, the availability of instructional materials centers, as well as of each of the various types of program materials kept in such centers, was related to the type and size of teacher education program, with greatest availability being in larger combined undergraduate and graduate programs.

C. Program Offerings in the Instructional Uses of Technologies

1. Training in Computers

About 84 percent of all Schools/Departments of Education offered to their students, either directly or through cooperative arrangements within the same or with another institution/organization, some form of training in the instructional uses of computers (Table 101). The percentage of programs offering such training in computers varied by type of program, with almost all of the larger combined undergraduate/graduate programs reporting having

While only about 10 percent of these programs required training in instructional computer uses for pre-service students in all grade-level specialties, more than four out of five programs indicated such a requirement for prospective elementary school teachers; and about 70 percent required such training for prospective secondary school teachers (Table 107). Where such training requirements were present, they mostly took the form of module(s) within an education course, especially in undergraduate-only programs (Table 108); however, substantial numbers of programs also indicated satisfying this requirement by a separate full course.

Finally, all Schools/Departments of Education were asked if they had any formal policies concerning computer literacy, above and beyond any institution-wide policies, that all teacher education students should achieve. Table 109 shows that fewer than one out of four programs had such a policy in 1984-85, with proportionately more (30 percent) of the larger combined undergraduate/graduate programs indicating existence of such a policy. For those programs with special computer literacy policies for their teacher education students, the most frequently named requirement of the policy (named by more than four out of five of these programs) was that students should know general operations or procedures for using canned software. Students should take an introductory course in computers for credit and should be familiar with the ethical issues associated with computer use were also frequently mentioned as elements of programs with computer literacy policies. The percentages of institutions indicating these and other less frequently named elements of their computer literacy policy are shown in Table 110.

2. Training in Video Technologies

The percentages of teacher education programs, regardless of type of program, that offered training to students in the instructional uses of video technologies were somewhat lower than the corresponding percentages for computers. Table 111 shows that about two-thirds (64 percent) of all Schools/Departments of Education were offering such training in video technologies during 1984-85. Proportionately more (72 percent) of the larger combined undergraduate/graduate programs reported offering this training to their students.

The types of training most frequently offered by these programs (Table 112) were, in order, training in the operation of equipment (94 percent of the programs), training in the integration of equipment with general instructional objectives (82 percent) and with overall curriculum content (73 percent), and training in the selection of video/TV programs for use in instruction (69 percent). These were also the most frequently named types of training "required" of students by those institutions requiring some training in the instructional use of video technologies (Table 113).

Unlike training offerings for computers, training in the instructional use of video technologies was most frequently offered by all programs (except graduate-only programs) as a module or modules within an education course (Table 114); however, substantial numbers of programs (including 60 percent of the larger combined programs) indicated such training was also offered as a separate full course. As with computers, training in the instructional uses of video technologies was most frequently conducted by School/Department of Education faculty (in 85 percent of programs) and seldom involved the use of resources from outside the institution (Table 115).

Interestingly, the percentages of Schools/Departments of Education indicating that some training in the instructional uses of video technologies was required for at least some of their pre-service students (Table 116) are somewhat higher than the corresponding percentages reported for training in computers (see Table 106). About two-thirds (64 percent) of the programs offering training in the use of video reported such a requirement for some pre-service students, with proportionately more (72 percent) of the undergraduate-only programs indicating so. More than four out of five of these programs indicated such a requirement for prospective elementary school teachers and almost as many indicated such requirements for prospective secondary school teachers (Table 117).

3. Training in Audio Technologies

Formal training offerings to students in the instructional uses of audio technologies by Schools/Departments of Education were somewhat less common than such offerings both for computers and for video technologies. Slightly more than half (55 percent) of all teacher education programs reported offering some training in the instructional uses of audio to their students during 1984-85 (Table 118). Proportionately more (about 60 percent) of the larger combined undergraduate/graduate programs and the undergraduate programs only offered such training to their students.

As with computers and video technologies, where training in audio technologies was offered, it most frequently involved training in the operation of equipment. However, other types of training were also frequently offered by these programs. Indeed, 70 percent or more of these programs reported offering each type of training listed in Table 119, except those types of training involving sophisticated equipment (e.g., audio conferencing, music/speech synthesizers) which, as we have seen, was unavailable to most teacher education programs. Interestingly, the percentages of programs requiring various types of student training in audio technologies (Table 120) are somewhat higher than the corresponding percentages reported for video technologies.

D. Student Participation in Program Offerings

Schools/Departments of Education indicating that they offered training to students in the instructional uses of computers, video technologies and/or audio technologies were also asked to report the numbers of undergraduate and graduate students who were receiving this training during the current term. Table 121 shows that an estimated 18 percent (or 66,055) of the undergraduate students and about the same percentage (or 45,591) of the graduate students enrolled in teacher education programs that offered training in the instructional uses of computers participated in such training. The percentages are about the same for undergraduate students but somewhat lower for graduate students, with respect to training offered in the instructional uses of video and audio technologies; about 17 percent of the undergraduate students and only 6 to 8 percent of the graduate students were estimated to have received training in these technologies during the current term. Within the combined undergraduate/graduate programs offering training in the instructional uses of a particular technology, proportionately more undergraduate and graduate students received such training in small programs than in larger programs.

Appendix A

HEUS-85 Survey Instruments

The following instruments are one-color copies of the survey questionnaires that were used for the study. They were color-coded (gray for Computers for Instruction, yellow for Instructional Video/Audio, and tan for Teacher Education) and were two-color printed so that the instructions were easily differentiated from the rest of the questions.

In the following copies, the raw data are reported. For consistency, the number of valid responses for each question and the percentage distribution (adjusted for nonresponse) for the appropriate response categories are shown. Numbers of respondents vary from question to question, and even item to item within a question, for two reasons: (1) the skip patterns found in the instruments, directing certain respondents away from inapplicable questions; and (2) item or subitem nonresponse.

Appendix A

HEUS-85 Survey Instruments

Schools/Departments of Education with combined undergraduate and graduate teacher education programs were asked if the training offered to students in the instructional uses of the technologies was very different for undergraduate and graduate students. More than half of the programs for which this question was applicable indicated that the training offered for each of the three types of technology was very different for graduate students and undergraduate students (Table 122). About two-thirds of the programs reporting such differences indicated, for each type of technology, that either or both the amount and kind of training provided was very different for graduate students. This finding is consistent with the finding that, among such programs offering training in the instructional uses of computers, graduate students on the average received almost twice the amount of training as did undergraduate students (i.e., an average of 57 hours of training for graduate students compared to an average of 34 hours of training for undergraduate students) (Table 123).

E. Future Plans for Training in Technology

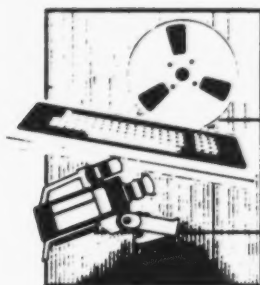
Finally, all Schools/Departments of Education were asked to indicate their plans regarding future training in the instructional uses of computers, video and audio technologies. The most frequently named plan for computers was expanding facilities and/or equipment, indicated by 76 percent of all programs. Increasing emphasis on training in the selection of software and adding new courses also were named by more than six out of ten programs (Table 124). In general, proportionately higher numbers of the larger combined undergraduate/graduate programs reported each area of planning than did the smaller combined programs which, in turn, were more likely to report such plans than were the undergraduate programs only.

With regard to plans for training in the instructional uses of video technologies, the most frequently noted areas of planning (noted by about two-thirds of all programs) were increasing emphasis on training in the selection of media and program materials and expanding facilities and/or equipment (Table 125). These two areas of planning were also the most frequently indicated for training in the instructional uses of audio technologies (Table 126). For both video and audio planning, no consistent variations were observed among the different types of teacher education programs.

Some interesting differences in training plans emerge through comparisons across types of technology. First of all, substantially higher numbers of institutions were planning expansion of computer facilities and equipment than were planning such expansion for video or audio. Further, the number of programs planning to add new courses for training in computers was more than double the number planning new courses for video training and almost three times the number planning additional courses for training in audio technologies. Similar differences were found with respect to adding new qualified staff, with the percentage of programs indicating such plans for computers being about twice the percentage indicating such plans for video or audio technologies.

A Study of the Educational Uses of Technology in Higher Education

Instructional Video/Audio Questionnaire



Corporation
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Endorsed by:

American Association of
Community and Junior
Colleges (AACJC)

American Association of
State Colleges and
Universities (AASCU)

American Council on
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Colleges (AAC)

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Universities (AAU)

Association of Physical
Plant Administrators of
Universities and Colleges
(APPAUC)

Council of Independent
Colleges (CIC)

National Association of
State Universities and Land
Grant Colleges (NASULGC)

National University
Continuing Education
Association (NUCEA)

All information which would
permit identification of the
individual respondent or
institution will be held in strict
confidence, will be used only by
persons engaged in and for the
purposes of the survey, and will
not be disclosed or released to
others for any purposes without
the respondent's expressed
permission, except as required
by law.

IMPORTANT DEFINITIONS

For the specific purposes of this study, please use the following definitions for terms that appear in the questionnaire.

1. **Use for Instructional Purposes:** Refers to use in teaching students and is characterized by student involvement and an emphasis on student learning. Excluded are instruction in computer operations or broadcast, film, video, or audio production.
2. **Video Technologies:** Refers to any technologies that carry or display pictures and sound material, including broadcast TV or teletext, cable TV or teletext, videocassette/videotape, videodisc, closed circuit TV, or ITFS. Does not include videotex, still photography, film strips, or motion picture film.
3. **Audio Technologies:** Refers to technologies that carry or present sound material only through audio-cassette/audiotape, record, telephone, and radio.

1. Which best describes your institution?

(Circle one.)

- | | |
|--|---|
| A single-campus institution | 1 |
| A branch campus of a parent institution | 2 |
| A main campus with one or more branch campuses | 3 |
| One of the administratively equal campuses of a multi-campus institution | 4 |

Please Note: If your institution is part of a multi-campus or multi-unit institution, please respond to the items in this questionnaire for **only** the specific institutional unit identified on the label affixed to the back cover.

2. What kinds of degree programs are offered at your institution?

(Circle all that apply.)

- | | |
|--|---|
| a. Less than a baccalaureate degree (e.g., Associate degree, 1- or 2-year certificate) | 1 |
| b. Baccalaureate degree (e.g., A.B., B.S.) | 2 |
| c. Post-baccalaureate degree (e.g., M.S., Ph.D., D.D.S., M.D., J.D.) | 3 |
| d. Other professional degree at the baccalaureate level | 4 |
| e. Other (Please specify) _____ | 5 |

SECTION A: GENERAL TYPES OF USE

3. Please indicate, to the best of your judgment, the extent to which faculty or administrators at your institution use video and audio technologies in the following ways.

(Circle only one on each line.)

Video Technologies	Widely Used (by ¼ or more)	Less Widely Used (by fewer than ¼)	Not Used	Don't Know
a. One-way presentation of instruction to students on campus	1	2	3	4
b. One-way presentation of instruction to students off campus	1	2	3	4
c. Conferencing or two-way communications between faculty and off-campus students	1	2	3	4
d. Conferencing or two-way communications between faculty and students in multiple locations on campus	1	2	3	4
e. Pictorial enhancement of interactive programmed instruction using computers	1	2	3	4
f. Counseling (e.g., role-playing, self-reflection)	1	2	3	4
g. Outreach (e.g., providing non-instructional services, community forums, or information about the college to the community)	1	2	3	4
h. Promotion/recruitment (i.e., to attract new students to the college)	1	2	3	4
i. Staff development	1	2	3	4
j. Other (specify) _____	1	2	3	4
Audio Technologies				
k. One-way presentation of instruction to students on campus	1	2	3	4
l. One-way presentation of instruction to students off campus	1	2	3	4
m. Conferencing or two-way communications between faculty and off-campus students	1	2	3	4
n. Conferencing or two-way communications between faculty and students in multiple locations on campus	1	2	3	4
o. Sound enhancement of interactive programmed instruction using computers	1	2	3	4
p. Counseling	1	2	3	4
q. Outreach	1	2	3	4
r. Promotion/recruitment	1	2	3	4
s. Staff development	1	2	3	4
t. Other (specify) _____	1	2	3	4

SECTION B: VIDEO TELECOURSE AND AUDIO COURSE OFFERINGS

Note: The questions in this section (Q.4 through Q.26) ask about full video telecourses and audio courses. For purposes of this survey, these terms are defined as follows:

Video Telecourse: Refers to credit or non-credit courses in which instruction makes substantial use of video technologies. A telecourse may or may not also involve substantial use of text books or other print materials and regular student communication with an instructor.

Audio Course: Refers to credit or non-credit courses in which instruction makes substantial use of audio technologies. An audio course may or may not also involve substantial use of text books or other print materials and regular student communication with an instructor.

4. Is your institution offering any video telecourses or audio courses during the current (1984-85) school year?

(Circle one.)

No 1 → GO TO Q. 23
Yes 2 → CONTINUE WITH Q.5

5. How many video telecourses (for credit and non-credit) is your institution offering during the 1984-85 school year? (If none, enter zero)

a. Total number of video telecourses for degree credits
b. Total number of video telecourses for continuing education units
c. Total number of non-credit video telecourses

If your institution does NOT offer any VIDEO telecourses during the 1984-85 school year, GO TO Q.9; otherwise, CONTINUE WITH Q.6.

6. How many students have been enrolled in these video telecourses during the 1984-85 school year? (NOTE: Please recall that you should respond only for the specific institutional unit identified on the back cover of the questionnaire. If uncertain, please give your best estimate.)

(If none, enter zero)

a. Total number of students enrolled for degree credits
b. Total number of students enrolled for continuing education units
c. Total number of students enrolled not for credit

7. IN COLUMN A, indicate any video telecourses that your institution has offered during the 1984-85 school year (e.g., Chemistry, English as a second language, History).
- IN COLUMN B, indicate the level at which each course is offered (i.e., R = remedial, L = lower division, U = upper division, G = graduate).
- IN COLUMN C, for each course listed, indicate the title of the program series used (e.g., The Brain, The Write Course).
- IN COLUMN D, indicate the number of students enrolled during the year in each course.

	A	B	C	D
	Subject of Course	Level	Title of Program Series*	Number of Students Enrolled
a.	_____	_____	_____	_____
b.	_____	_____	_____	_____
c.	_____	_____	_____	_____
d.	_____	_____	_____	_____
e.	_____	_____	_____	_____
f.	_____	_____	_____	_____
g.	_____	_____	_____	_____
h.	_____	_____	_____	_____
i.	_____	_____	_____	_____
j.	_____	_____	_____	_____

*If closed-circuit or ITFS telecourses of the live camera-in-the-classroom type, or if no other program title exists, simply write in "local."

NOTE: Attach an additional sheet, labeled Q.7, if necessary.

8. How are the video telecourses offered by your institution distributed?

(Circle all that apply.)

- a. Public television station 1
- b. Commercial television station 2
- c. Cable television 3
- d. Campus closed circuit system 4
- e. Instructional Television Fixed Service (ITFS) 5
- f. State or regional closed circuit system 6
- g. Pre-recorded video cassette or videodisc 7
- h. Other (please specify) 8

9. How many AUDIO courses (for credit and non-credit) is your institution offering during the 1984-85 school year?

(If none, enter zero.)

- a. Total number of Audio courses for Degree Credits _____
- b. Total number of Audio courses for Continuing Education units _____
- c. Total number of Non-credit Audio Courses _____

If your institution does NOT offer any AUDIO courses during the 1984-85 school year, GO TO Q.13; otherwise, CONTINUE WITH Q.10.

10. How many students have been enrolled in these audio courses during the 1984-85 school year? (NOTE: Please recall that you should respond only for the specific institutional unit identified on the back cover of the questionnaire. If uncertain, please give your best estimate.)

(If none, enter zero.)

- a. Total number of students enrolled for degree credits
- b. Total number of students enrolled for continuing education units
- c. Total number of students enrolled not for credit

11. IN COLUMN A, indicate any audio courses that your institution has offered during the 1984-85 school year (e.g., chemistry, English as a second language, history)

IN COLUMN B, indicate the level at which each course is offered (i.e., R = remedial, L = lower division, U = upper division, G = graduate).

IN COLUMN C, for each course listed, indicate the title of the program series used (e.g., The Challenge of China and Japan, The World of F. Scott Fitzgerald).

IN COLUMN D, indicate the number of students enrolled during the year in each course.

	A	B	C	D
	Subject of Course	Level	Title of Program Series*	Number of Students Enrolled
a.	_____	_____	_____	_____
b.	_____	_____	_____	_____
c.	_____	_____	_____	_____
d.	_____	_____	_____	_____
e.	_____	_____	_____	_____
f.	_____	_____	_____	_____
g.	_____	_____	_____	_____
h.	_____	_____	_____	_____
i.	_____	_____	_____	_____
j.	_____	_____	_____	_____

*If audio use is primarily audio conferencing, or no other program title exists, simply write in "local."

NOTE: Attach an additional sheet, labeled Q.11, if necessary.

12. How are the audio courses offered by your institution distributed? (Circle all that apply)

- a. Public radio station 1
- b. Commercial radio station 2
- c. Cable radio 3
- d. SCA or FM subchannel 4
- e. Pre-recorded audiocassette or records 5
- f. Other (please specify) 6

13. Does your institution try to arrange the scheduling of video telecourses or audio courses at times outside the normal hours of instruction for non-media courses?

(Circle one under each column.)

	Video	Audio
No	1	1
Yes	2	2
Does not apply	3	3

14. Does your institution use its own broadcast station(s) to distribute instructional programs?

(Circle one under each column.)

	Video	Audio
No, the institution does not own a broadcast station	1	1
No, the institution does not use its own broadcast station to distribute instructional programs	2	2
Yes	3	3

15. Does your institution receive discounted or free program time for distributing instructional programs from any broadcast or cable outlet?

(Circle all that apply under each column.)

	Video	Audio
a. No	1	1
b. Yes, free program broadcast time	2	2
c. Yes, reduced cost program broadcast time	3	3
d. Yes, cable access channel(s)	4	4

16. For video or audio courses offered by your institution, are there parallel non-media courses for the same subjects and levels in which students may choose to enroll?

(Circle one under each column.)

	Video	Audio
No	1	1
Yes, for every course	2	2
Yes, but only for certain courses	3	3
Does not apply	4	4

17. Are the video and audio courses offered by your institution to students off-campus also made available to students on-campus?

(Circle one under each column.)

	Video	Audio
No	1	1
Yes, for every course	2	2
Yes, but only for certain courses	3	3
Does not apply	4	4

18. Are there instructors with whom students can interact on a regular basis assigned to each video telecourse or audio course offered by your institution?

(Circle one.)

No	1	→ GO TO Q. 20
Yes, for every course	2	→ CONTINUE WITH Q. 19
Yes, but only for certain courses	3	

19. What is the primary means of communication with faculty responsible for the video telecourse or audio course?

(Circle one.)

Telephone	1
In person	2
Electronic mail	3
Correspondence	4
Other (please specify) _____	5

26. Does your institution's policy regarding the recognition of credits earned by video telecourse or audio course distinguish between requirements for a major field of study and other degree requirements?

(Circle one under each column.)

	Video	Audio
Institution policy makes no such distinction	1	1
Institution policy restricts the use of telecourse credits in meeting requirements for a major field of study	2	2
Institutional policy varies from department to department	3	3
Institution has not settled policy toward use of telecourse credits in meeting degree requirements	4	4

SECTION C: USES FOR INTERACTIVE COMMUNICATIONS

27. During the current (1984-85) school year, has closed-circuit television or ITFS of the live camera-in-the-classroom type been used at your institution for instructional purposes?

(Circle one.)

Don't know	1	} → GO TO Q.30
No	2	
Yes	3	→ CONTINUE WITH Q.28

28. If yes, what kind of student interaction with the instructor is typically possible?

(Circle all that apply.)

a. No simultaneous interaction	1
b. On-line computer interaction	2
c. Simultaneous audio-only interaction	3
d. Simultaneous audio and video interaction	4
e. Don't know	5

29. Typically, in use of live camera-in-the-classroom television, are either the on-camera instructor or any of the students viewing the class located outside the institution?

(Circle all that apply.)

a. No	1
b. Yes, on-camera instructor is located elsewhere	2
c. Yes, some students viewing are located elsewhere	3
d. Don't know	4

30. During the current (1984-85) school year, has audio conferencing been used at your institution for instructional purposes?

(Circle one.)

Don't know	1	} → GO TO Q.32
No	2	
Yes	3	→ CONTINUE WITH Q.31

31. If yes, are other interactive media typically used with audio conferencing for instructional purposes?

(Circle all that apply.)

a. No	1
b. Yes, with visuals (e.g., electronic blackboard, facsimile transmission)	2
c. Yes, computer conferencing	3
d. Don't know	4

SECTION D: SUPPORT ACTIVITIES

32. Does your institution offer training for faculty in the use of video technologies for instruction?

(Circle one.)

- | | | | |
|--|---|-----|--------------------|
| No | 1 | → | GO TO Q 35 |
| Yes, formal, structured training | 2 | } → | CONTINUE WITH Q 33 |
| Yes, informal training | 3 | | |

33. Which of the following types of faculty training does your institution offer?

(Circle all that apply.)

- | | |
|---|---|
| a. Training in the selection of video/TV programs for use in instruction | 1 |
| b. Training in the production or design of video/TV programs for use in instruction | 2 |
| c. Training in the integration of video use with overall curriculum content | 3 |
| d. Training in the integration of video use with overall instructional methods | 4 |
| e. Any training at all in general instructional methods | 5 |
| f. Training in the operation of equipment | 6 |

34. How long does the faculty training typically run? _____ (Number of hours)

35. Does your institution provide any organized expert assistance (e.g., special staff, faculty committee) for faculty who wish to use video for instructional purposes?

(Circle all that apply.)

- | | |
|--|---|
| a. No | 1 |
| b. Yes, in the evaluation of program materials | 2 |
| c. Yes, in the acquisition of rights to use program materials | 3 |
| d. Yes, technical assistance in the operation of equipment | 4 |
| e. Yes, expert assistance in the integration of student video use with overall curriculum content | 5 |
| f. Yes, expert assistance in the integration of student video use with overall instructional methods | 6 |
| g. Yes, other assistance (please specify) _____ | 7 |

36. Is your institution a member of any formal consortium or informal cooperative arrangement of colleges/organizations offering, producing, or sharing video/TV programs or related services?

(Circle one.)

- | | | | |
|---------------------------------------|---|---|--------------------|
| No | 1 | → | GO TO Q 40 |
| Yes, (specify complete name(s)) _____ | 2 | → | CONTINUE WITH Q 37 |

37. How long has your institution been a member of this consortium/cooperative arrangement? (If membership in more than one consortium/cooperative arrangement, indicate number of years for oldest membership.)

Number of years in consortium/cooperative arrangement: _____

38. a. For the consortium/cooperative arrangement of which your institution has been a member for the longest time, does membership generally provide television-related services which meet your institution's needs and expectations?

(Circle one.)

- | | |
|-----------|---|
| No | 1 |
| Yes | 2 |

b. Do you expect your institution to remain a member of the consortium/cooperative arrangement during the next three years?

(Circle one.)

- | | |
|-----------|---|
| No | 1 |
| Yes | 2 |

39. What television-related services are provided by the consortia/cooperative arrangements to which your institution belongs?

(Circle all that apply.)

- a. Television program previews 1
- b. Television program exchange 2
- c. Staff or faculty exchange 3
- d. Original productions 4
- e. Staff and faculty development 5
- f. Group buy/acquisition (program rights) 6
- g. Other (please specify) 7

40. Is your institution a member of any formal consortium or informal cooperative arrangement of colleges/organizations offering, producing, or sharing audio/radio programs or related services?

(Circle one.)

- No 1
- Yes (specify complete name(s)) 2

SECTION E: AVAILABILITY OF EQUIPMENT AND FACILITIES

41. Does your institution have instructional materials centers that contain any of the following for use by faculty or students?

(Circle all that apply.)

- a. Videocassettes/tapes or videodiscs 1
- b. Interactive videodisc packages with computer software 2
- c. Audiocassettes/tapes or records (music only) 3
- d. Audiocassettes/tapes or records (excluding music only) 4
- e. None of the above 5

42. Which of the following central reception facilities are available at your institution?

(Circle all that apply.)

- a. Master TV antenna 1
- b. Community cable system drop(s) 2
- c. ITFS reception equipment 3
- d. Fixed satellite receive-only dish 4
- e. Rotatable satellite receive-only dish 5
- f. Other microwave reception equipment 6
- g. Satellite transmission antenna ("uplink") 7
- h. None of the above 8

43. Which of the following video or audio distribution/exhibition facilities are available for instructional purposes at your institution?

(Circle all that apply.)

- a. Campus closed-circuit TV (on-campus origination) 1
- b. Campus buildings wired by community cable TV system 2
- c. Special video or film screening/projection room 3
- d. ITFS transmission equipment 4
- e. Non-commercial television broadcast station 5
- f. Non-commercial radio broadcast station 6
- g. Community cable TV system educational/access channels (No. of channels _____) 7
- h. Audio conferencing facilities 8
- i. Music/speech synthesizers 9
- j. Language labs 10
- k. Music listening rooms 11
- l. Central public address system 12
- m. None of the above 13

SECTION F: FINANCE AND ORGANIZATION/MANAGEMENT

44. Over the next two years, do you expect funding for instructional use of video and audio technologies from each of the sources listed below to increase, decrease, or remain the same?

(Circle only one on each line.)

	Increase	Remain the Same	Decrease	Don't Know
a. General operating funds of the institution	1	2	3	4
b. Internally generated funds (e.g., sale of institutionally produced courses)	1	2	3	4
c. Telecourses tuition and fees	1	2	3	4
d. Special state appropriations	1	2	3	4
e. Non-federal grants and contracts (including businesses and foundations)	1	2	3	4
f. Federal grants and contracts	1	2	3	4

45. Over the next two years, will your institution's expenditures for video and audio technologies used in instruction (equipment, programming/materials, and personnel) increase, decrease, or remain the same?

(Circle only one on each line.)

	Increase	Remain the Same	Decrease	Don't Know
Video				
a. Equipment	1	2	3	4
b. Programs/materials	1	2	3	4
c. Personnel	1	2	3	4
Audio				
d. Equipment	1	2	3	4
e. Programs/materials	1	2	3	4
f. Personnel	1	2	3	4

46. In your institution, who has primary responsibility for each of the following activities?

(Circle only one on each line.)

	Board of Trustees	Administrative Officer (e.g., CEO, Comptroller)	Academic Officer (e.g., Provost, Chancellor, or Academic Dean)	Department Head	Faculty Committee	Individual Faculty	Specialized Audio/Video Staff	Not Applicable
a. Determining telecourse/audio course offerings	1	2	3	4	5	6	7	8
b. Establishing budget for telecourse/audio course offerings	1	2	3	4	5	6	7	8
c. Determining faculty assignments for telecourses/audio courses	1	2	3	4	5	6	7	8
d. Determining student tuition and fees for telecourses/audio courses	1	2	3	4	5	6	7	8
e. Planning faculty training for instructional use of video/audio	1	2	3	4	5	6	7	8
f. Establishing budget for purchasing classroom video/audio equipment	1	2	3	4	5	6	7	8
g. Selection of brand or supplier for classroom video/audio equipment	1	2	3	4	5	6	7	8
h. Determining whether classroom video/audio equipment is placed in specific location or rotated among classrooms on request	1	2	3	4	5	6	7	8
i. Determining telecourse/audio course credit requirements on transferability	1	2	3	4	5	6	7	8
j. Representing institution in telecourse/audio course consortium decision making	1	2	3	4	5	6	7	8

Thank you for taking the time to fill out this questionnaire.

If we should need to contact you regarding the questionnaire, what is the best time to call? _____

What is your telephone number?

--	--	--

Area Code

--	--	--	--	--	--	--

Number

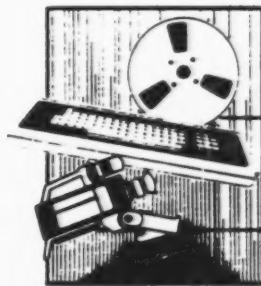
To receive a summary report of the findings of this study, check here ☐ and supply us with your:

Name _____

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A Study of the Educational Uses of Technology in Higher Education

Computers For Instruction Questionnaire



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All information which would
permit identification of the
individual respondent or
institution will be held in strict
confidence, will be used only by
persons engaged in and for the
purposes of the survey, and will
not be disclosed or released to
others for any purposes without
the respondent's expressed
permission, except as required
by law.

1. Which best describes your institution?

(Circle one.)

- | | |
|--|---|
| A single-campus institution | 1 |
| A branch campus of a parent institution | 2 |
| A main campus with one or more branch campuses | 3 |
| One of the administratively equal campuses of a multi-campus institution | 4 |

Please Note: If your institution is part of a multi-campus or multi-unit institution, please respond to the items in this questionnaire for **only** the specific institutional unit identified on the label affixed to the back cover.

2. What kinds of degree programs are offered at your institution?

(Circle all that apply.)

- | | |
|--|---|
| a. Less than a baccalaureate degree (e.g., Associate degree, 1- or 2-year certificate) | 1 |
| b. Baccalaureate degree (e.g., A.B., B.S.) | 2 |
| c. Post-baccalaureate degree (e.g., M.S., Ph.D., D.D.S., M.D., J.D.) | 3 |
| d. Other professional degree at the baccalaureate level | 4 |
| e. Other (Please specify) | 5 |

3. Which of the following major areas or programs of study are offered to undergraduate students at your institution?

(Circle all that apply.)

- | | |
|--|----|
| a. Liberal Arts | 1 |
| b. Education | 2 |
| c. Behavioral Sciences | 3 |
| d. Social Sciences (including History) | 4 |
| e. Business | 5 |
| f. Mathematics | 6 |
| g. Computer Sciences | 7 |
| h. Life Sciences | 8 |
| i. Physical Sciences | 9 |
| j. Engineering | 10 |
| k. Design | 11 |
| l. Fine Arts | 12 |
| m. Remedial Basic Studies (reading, math, writing) | 13 |
| n. Pre-medical or pre-dental | 14 |
| o. Pre-law | 15 |
| p. Other (please specify) | 16 |
| q. No undergraduate programs | 17 |

4. Please indicate, to the best of your judgment, the ways that students, faculty, and administrators at your institution use computers.

		(Circle only one on each line.)		
<u>Students</u>		<u>Used</u>	<u>Not Used</u>	<u>Don't Know</u>
a.	For hands-on use in learning about the use of computers (e.g., introduction to computers, computer literacy)	1	2	3
b.	Programmed exercises, tutorials, drills (computer as tutor)	1	2	3
c.	Instructional use of general-purpose applications software (e.g., spread sheets, word processing packages, statistical packages)	1	2	3
d.	Instructional communications with faculty (e.g., conferencing or electronic mail)	1	2	3
e.	Taking exams or tests	1	2	3
f.	Control of laboratory instruments, apparatus, equipment, machinery	1	2	3
g.	Research and bibliographic	1	2	3
<u>Faculty</u>				
h.	For hands-on use in learning about the use of computers (i.e., computer training as part of faculty development)	1	2	3
i.	Instructional use of general-purpose applications software (e.g., spread sheets, word processing packages, statistical packages)	1	2	3
j.	Instructional communications with student (e.g., conferencing or electronic mail)	1	2	3
k.	Administrative use of general-purpose applications software	1	2	3
l.	Administrative use of special-purpose software (e.g., recordkeeping, electronic mail)	1	2	3
m.	Instructional management and assessment (e.g., testing, feedback to students, planning individualized instruction)	1	2	3
n.	Control of laboratory instruments, apparatus, equipment, machinery	1	2	3
o.	Research and bibliographic	1	2	3
<u>Administrators</u>				
p.	Administrative use of general-purpose applications software	1	2	3
q.	Administrative use of special-purpose software	1	2	3
r.	Counseling (e.g., career planning)	1	2	3
s.	Outreach (e.g., providing noninstructional services or information about the college to the community)	1	2	3
t.	Electronic publishing	1	2	3
u.	Archiving or bulk storage of library materials in electronic form	1	2	3

5. From the list in Q.4, select the one type of use which, to your knowledge, is the fastest growing use among each user group at your institution, and write the corresponding letters (a-u) below.

- a. Students (letters a-g) _____
- b. Faculty (letters h-o) _____
- c. Administrators (letters p-u) _____

6. Which of the following administrative systems at your institution are now computerized or scheduled to be computerized next year?

(Circle all that apply under each column.)

	Currently	Next Year
a. Course offerings	1	1
b. Standardized test scores (e.g., SAT, GRE)	2	2
c. Student grade records	3	3
d. Enrollment projections	4	4
e. Student financial aid program	5	5
f. Fund raising	6	6
g. Payroll	7	7
h. Other (please specify) _____	8	8
i. None of the above	9	9

7. Does your institution have a task force, study group, or individual administrator designated to look into the best uses and necessary technical facilities for use of audio, video, and computers for instructional purposes?

(Circle one.)

No	1
Yes	2

8. Which of the following computer facilities/equipment are available for use by faculty and/or students in instruction or instructional management and assessment at your institution?

(Circle all that apply.)

a. Institution's mainframes or minicomputers	1
b. Regional public computer service	2
c. Commercial computer service	3
d. Microcomputers (stand-alone)	4
e. Local area networks	5
f. Other (please specify) _____	6
g. None of the above	7
h. Don't know	8

9. Are microcomputers or mainframes/minis being used with video, audio, videotex, or graphics peripherals at your institution?

(Circle all that apply under each column.)

	Mainframes/ Minis	Microcomputers
a. No use with any of these peripherals	1	1
b. Yes, with videocassette recorders or linear access videodisc players	2	2
c. Yes, with random access videodisc players	3	3
d. Yes, with compact audio discs	4	4
e. Yes, with voice synthesizers	5	5
f. Yes, with music synthesizers	6	6
g. Yes, with videotex terminals	7	7
h. Yes, with graphics peripherals (e.g., plotters, image digitizers)	8	8

10. Does your institution have a central collection or collections that contain any of the following for use by faculty or students?

(Circle all that apply.)

- | | |
|--|---|
| a. Business applications software for micros (e.g., Visicalc) | 1 |
| b. Word processing software for micros (e.g., Wordstar) | 2 |
| c. Computer-based instructional management software for micros | 3 |
| d. Statistical analysis packages for micros | 4 |
| e. Data base systems for micros (e.g., dBase II) | 5 |
| f. Communications software for micros (e.g., Visilink) | 6 |
| g. Microcomputer software documentation | 7 |
| h. Mainframe/minicomputer software documentation | 8 |
| i. None of the above | 9 |

11. What kinds of software for instructional use are installed on a mainframe or minicomputer available to users at your institution?

(Circle all that apply.)

- | | |
|--|---|
| a. Statistical analysis packages (e.g., SAS, SPSS, BMD) | 1 |
| b. Simulation software | 2 |
| c. Data base management systems (e.g., System 2000, Total) | 3 |
| d. Other (please specify) _____ | 4 |
| e. None of the above | 5 |

12. Does your institution offer any courses this year (1984-85) in which students are asked to use software or data bases that are installed on a mainframe or minicomputer?

(Circle one.)

- | | |
|-----------|--------------------------------|
| No | 1 |
| Yes | 2 → (How many courses? _____) |

13. Can students and/or faculty access any mainframe or minicomputer using terminals from outside the institution (i.e., dial-up access)?

(Circle one.)

- | | |
|-----------|---|
| No | 1 |
| Yes | 2 |

14. Is your institution a member of any formal consortium or informal cooperative arrangement of colleges/organizations offering, producing, or sharing computer-related services or materials?

(Circle one.)

- | | |
|--|------------------------|
| No | 1 → GO TO Q.18 |
| Yes [specify complete name(s)] _____ | 2 → CONTINUE WITH Q.15 |

15. How long has your institution been a member of this consortium/cooperative arrangement? (If membership in more than one consortium/cooperative arrangement, indicate number of years for oldest membership.)

Number of years in consortium/cooperative arrangement _____

16. a. For the consortium/cooperative arrangement of which your institution has been a member for the longest time, does membership generally provide computer-related services which meet your institution's needs and expectations?

(Circle one.)

No 1
Yes 2

- b. Do you expect your institution to remain a member of this consortium/cooperative arrangement during the next three years?

(Circle one.)

No 1
Yes 2

17. What computer-related services are provided by the consortia/cooperative arrangements to which your institution belongs?

(Circle all that apply.)

- a. Group hardware buying 1
b. Group software buying 2
c. Software evaluation 3
d. Distribution of software developed by member institutions 4
e. Assistance in networking hardware 5
f. Providing instructional or training services 6
g. Cross-registration for computer courses 7
h. Library-related services 8
i. Large mainframe access 9
j. Other (please specify) 10

18. Are there any computer literacy prerequisites in any non-Computer Science courses at your institution?

(Circle one.)

No 1
Yes 2

19. Do student transcripts provided by your institution explicitly report any indication of the student's attainment of computer literacy or proficiency?

(Circle one.)

No 1
Yes 2

20. Does your institution have formal (written) policies regarding basic computer literacy or skills that all undergraduate students should achieve?

(Circle one.)

- Does not apply. No undergraduate programs 1 } → GO TO Q.23
No, there are NO such formal policies 2 }
Yes, for all undergraduate students 3 → GO TO Q.22
Yes, but only for undergraduate students majoring in certain disciplines 4 → CONTINUE WITH Q.21

21. For which major areas of programs of study is computer literacy a requirement for undergraduate students?

(Circle all that apply.)

- a. Liberal Arts 1
- b. Education 2
- c. Behavioral sciences 3
- d. Social sciences (including history) 4
- e. Business 5
- f. Mathematics 6
- g. Computer sciences 7
- h. Life sciences 8
- i. Physical sciences 9
- j. Engineering 10
- k. Design 11
- l. Fine arts 12
- m. Remedial basic studies (reading, math, writing) 13
- n. Pre-medical or pre-dental 14
- o. Pre-law 15
- p. Other (please specify) 16

22. Which of the following elements do your institution's formal computer literacy policies include?

(Circle all that apply.)

- a. Students should take an introductory course in computers for credit 1
- b. Students should be able to write a simple computer program 2
- c. Students should be able to document their own programming 3
- d. Students should be able to test and debug simple programs 4
- e. Students should know how to develop simple computer-oriented algorithms 5
- f. Students should be able to document their own algorithms 6
- g. Students should know general operations or procedures for using canned software (e.g., loading, backup, listing, saving, deleting, running programs) 7
- h. Students should know what general types of problems are (and are not) amenable to computer solution 8
- i. Students should understand the potential use of large bodies of quantitative data in a particular field of study 9
- j. Students should be familiar with the social implications of computer use (e.g., job loss from automation) 10
- k. Students should be familiar with the ethical issues associated with computer use (e.g., data privacy, copyrights, electronic trespass) 11
- l. Other (please specify) 12

23. Which of the following areas are covered by your institution's formal policies concerning computer use?

(Circle all that apply.)

- a. Development of computer software by faculty members 1
- b. Networking of hardware and software 2
- c. Access to computers by faculty 3
- d. Access to computers by students 4
- e. Conversion of library holdings to electronic form 5
- f. Rewiring of dormitories to accommodate computers 6
- g. Rewiring of faculty offices to accommodate computers 7
- h. Duplication of copyrighted software 8
- i. Data security (loss prevention and safeguards against intrusion) 9
- j. Privacy or confidentiality 10
- k. Other (please specify) 11
- l. Institution has NO formal policies governing computer use 12

24. Does your institution offer, directly or through arrangement with outside vendors, any special assistance to students or faculty in buying computer hardware (e.g., discount prices, loans, grants, group purchase arrangements)?

(Circle all that apply.)

- a. No 1
- b. Yes, to students 2
- c. Yes, to faculty 3

25. Does your institution require undergraduate students to own or acquire a microcomputer for use in their coursework or study?

(Circle one.)

- Yes, for all students 1
 - Yes, for undergraduate students in certain fields of study 2
 - No, there is NO such requirement 3
 - Does not apply. No undergraduate programs 4
- } → GO TO Q.27
- } → CONTINUE WITH Q.26

26. Is your institution currently planning or considering adoption of such a policy?

(Circle one.)

- No 1
- Yes 2

27. In your institution, who has primary responsibility for each of the following activities?

(Circle only one on each line.)

	Board of Trustees	Administrative Officer (e.g., CEO, Comptroller)	Academic Officer (e.g., Provost, Chancellor, or Academic Dean)	Department Head	Faculty Committee	Individual Faculty	Computer Center Staff	Not Applicable
a. Planning faculty training for instructional use of computers	1	2	3	4	5	6	7	8
b. Selecting computer mainframe/mini hardware (brand and supplier)	1	2	3	4	5	6	7	8
c. Selecting microcomputer hardware (brand and supplier)	1	2	3	4	5	6	7	8
d. Selecting general use software for mainframe/mini computer	1	2	3	4	5	6	7	8
e. Selecting course-specific software for mainframe/mini computer	1	2	3	4	5	6	7	8
f. Selecting general use software for microcomputers	1	2	3	4	5	6	7	8
g. Selecting course-specific software for microcomputers	1	2	3	4	5	6	7	8
h. Deciding what computer-related skills and knowledges are to be learned by students	1	2	3	4	5	6	7	8
i. Representing institution in computer consortium decision making	1	2	3	4	5	6	7	8
j. Establishment of incentives/rewards for software development by faculty	1	2	3	4	5	6	7	8
k. Determining frequency and amount of student use of computers	1	2	3	4	5	6	7	8
l. Establishing any separate charges for student use of computers	1	2	3	4	5	6	7	8

28. Which of the following incentives does your institution normally provide for faculty who develop computer programs?

(Circle all that apply.)

- | | |
|---|---|
| a. Faculty share in the royalties | 1 |
| b. Faculty retain rights to programs they develop | 2 |
| c. Reduced course load for faculty | 3 |
| d. Assistance in obtaining grants or contracts | 4 |
| e. Legal assistance | 5 |
| f. Clerical/logistical support | 6 |
| g. Additional compensation | 7 |
| h. Other (please specify) | 8 |
| i. Institution provides NO special incentives | 9 |

29. Does your institution currently offer training for faculty in the use of computers for instruction?

(Circle one.)

- | | |
|-----------|------------------------|
| No | 1 → GO TO Q.33 |
| Yes | 2 → CONTINUE WITH Q.30 |

30. Which of the following types of faculty training does your institution offer?

(Circle all that apply.)

- | | |
|--|---|
| a. Training in the operation of equipment | 1 |
| b. Training in the operation of "canned" applications software | 2 |
| c. Training in the selection of software | 3 |
| d. Training in the integration of student computer use with general instructional objectives | 4 |
| e. Training in the production or design of software | 5 |
| f. Training in the use of computers for instructional management and testing | 6 |
| g. Training of some kind in general instructional methods | 7 |

31. Who conducts this faculty training in computers?

(Circle all that apply.)

- | | |
|--|---|
| a. Instructors from institution faculty | 1 |
| b. Instructors from institution staff | 2 |
| c. User groups from within the institution | 3 |
| d. Consortia staff | 4 |
| e. Manufacturer's representatives | 5 |
| f. Software producer's representatives | 6 |
| g. Outside consultants | 7 |
| h. Other (please specify) | 8 |

32. How long does this faculty training in computers typically run?

_____ number of hours

33. Does your institution provide any organized expert assistance (e.g., special staff, faculty committee) for faculty who wish to use computers for instructional purposes?

(Circle all that apply.)

- a. No 1
- b. Yes, in the evaluation of software 2
- c. Yes, in the acquisition of rights to use software 3
- d. Yes, technical assistance in the operation of equipment 4
- e. Yes, expert assistance in the integration of student computer use with general instructional objectives 5
- f. Yes, assistance in the use of computers for instructional management and testing 6

34. In your judgment, which of the following is needed most by students, faculty, and administrators at your institution?

(Circle one number under each column.)

	Students	Faculty	Administrators
More computer software	1	1	1
More work stations or terminals	2	2	2
More storage capacity (i.e., main memory)	3	3	3
More peripherals (i.e., printers, modems, disk drives)	4	4	4

35. In total, how many mainframe/minicomputers and stand-alone microcomputers are currently available for use by students, faculty, and administrators at your institution? (If uncertain, please give your best estimate.)

- a. Number of mainframe/minicomputers available: _____
- b. Number of stand-alone microcomputers available

(Circle one.)

- 10 or fewer 1
- 11 to 50 2
- 51 to 100 3
- 101 to 250 4
- More than 250 5

36. Which of the following describe the trend in computer resources at your institution over the past three years?

(Circle all that apply.)

- a. Computer resource configuration at the institution has remained about the same 1
- b. The institution has shifted from reliance on use of one to use of several mainframe/minicomputers 2
- c. Many computer activities have been diverted from mainframe/minicomputers to stand-alone microcomputers on-campus 3

37. Over the next two years, do you realistically expect funding for instructional use of computers from each of the following sources listed below to increase, decrease, or remain the same?

(Circle only one on each line.)

	Increase	Remain the Same	Decrease	Don't Know
a. General operating funds of the institution	1	2	3	4
b. Internally generated funds (e.g., sale or licensing of institutionally produced software)	1	2	3	4
c. Special fees for computer use	1	2	3	4
d. Special state appropriations	1	2	3	4
e. Non-federal grants and contracts (including business and foundations)	1	2	3	4
f. Federal grants and contracts	1	2	3	4

38. Over the next two years, will your institution's expenditures for computers used in instruction (equipment, software, and personnel) increase, decrease, or remain the same?

(Circle only one on each line.)

	Increase	Remain the Same	Decrease	Don't Know
a. Equipment	1	2	3	4
b. Software	1	2	3	4
c. Personnel	1	2	3	4

39. Of the combined total computer time used by students, faculty, and administrators at your institution, about what percent is for each of the following purposes:

a. Administration	_____ %
b. Instruction	_____ %
c. Research	_____ %
d. Other (please specify)	_____ %
	100%

Thank you for taking the time to fill out this questionnaire.

If we should need to contact you regarding the questionnaire, what is the best time to call? _____

What is your telephone number?

Area Code				Number					

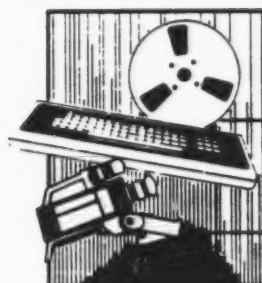
To receive a summary report of the findings of this study, check here ☐ and supply us with your:

Name: _____

Address: _____

A Study of the Educational Uses of Technology in Higher Education

Teacher Education Questionnaire



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State Colleges and
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(APPAUC)

Council of Independent
Colleges (CIC)

National Association of
State Universities and Land
Grant Colleges (NASULGC)

National University
Continuing Education
Association (NUCEA)

All information which would
permit identification of the
individual respondent or
institution will be held in strict
confidence, will be used only by
persons engaged in and for the
purposes of the survey, and will
not be disclosed or released to
others for any purposes without
the respondent's expressed
permission, except as required
by law.

IMPORTANT DEFINITIONS

For the specific purposes of this study, please use the following definitions for terms that appear in the questionnaire.

Video Technologies: Refers to any technologies that carry or display pictures and sound material, including broadcast TV or teletext, cable TV or teletext, videocassette/videotape, videodisc, closed circuit TV, or ITFS. Does not include videotex, still photography, film strips, or motion picture film.

Audio Technologies: Refers to technologies that carry or present sound material only through audio-cassette/audiotape, record, telephone, and radio.

SECTION A: GENERAL INFORMATION

1. Does your institution offer both undergraduate and graduate courses in teacher education?

(Circle one.)

No, undergraduate courses only 1

Yes, both graduate and undergraduate courses 2

2. How many undergraduate and graduate students in elementary and secondary teacher training are enrolled in the School/Department of Education during the current term?

(If none, enter zero.)

a. Number of undergraduate students _____

b. Number of pre-service graduate students _____

c. Number of in-service graduate students _____

SECTION B: COMPUTERS

3. During the 1984-85 school year, has the School/Department of Education offered to students (directly or through cooperative arrangements within your own institution or with another institution/organization) teacher training in the instructional uses of computers?

(Circle one.)

No 1 → GO TO Q.13

Yes 2 → CONTINUE WITH Q.4

4. Which of the following types of training in the instructional uses of computers does the School/Department of Education offer or require?

(Circle all that apply on each line.)

	Require for In-Service Students	Require for Pre-Service Students	Offer But Do Not Require	Do Not Offer
a. Training in the uses of computers in instructional management (e.g., testing, recordkeeping, planning individualized instruction)	1	2	3	4
b. Training in the "tool" uses of computers (e.g., spread sheet, word processing, problem solving)	1	2	3	4
c. Training in the use of computers for interactive control of video or audio materials	1	2	3	4
d. Training in the use of computers for delivery of programmed instruction (e.g., tutorials, drill and practice)	1	2	3	4
e. Training in the integration of computer use with overall instructional methods	1	2	3	4
f. Training in the integration of computer use with overall curriculum content	1	2	3	4
g. Training in the writing or design of computer programs	1	2	3	4
h. Training in the selection of software for use in instruction	1	2	3	4
i. Training in the management of multiple small groups of students using computers	1	2	3	4
j. Training in the operation of equipment	1	2	3	4
k. Other (please specify)	1	2	3	4

5. Which of the following describe the types of programs in teacher training that your institution offers for the instructional uses of computers?

(Circle all that apply.)

a. Module(s) within an education course	1
b. A full course	2
c. Summer institutes	3
d. Workshops	4
e. Other (please specify)	5

6. Who is responsible for conducting this training?

(Circle all that apply.)

a. School/Department of Education faculty	1
b. Computer science faculty	2
c. Other faculty within my institution	3
d. School districts	4
e. Vendors	5
f. Other private industry	6
g. Outside consultants	7
h. Other (please specify)	8

7. How many students are receiving this training during the current term?

(If none, enter zero.)

- a. Number of undergraduate students
- b. Number of pre-service graduate students
- c. Number of in-service graduate students

8. Is training offered by the School/Department in the instructional uses of computers differently for graduate students than for undergraduate students?

(Circle all that apply.)

- a. School/Department does not have a graduate program 1
- b. No, training program is about the same for graduate and undergraduate students 2
- c. Yes, amount of training is very different for graduate students 3
- d. Yes, kind of training is very different for graduate students 4

9. How many hours of training in the instructional uses of computers are typically offered for each of the following groups of students during the 1984-85 academic year?

(If none, enter zero.)

- a. Undergraduate students hours
- b. Pre-service graduate students hours
- c. In-service students hours

10. Is any teacher training in the instructional uses of computers required of any pre-service students?

(Circle one.)

- No 1 → GO TO Q.13
- Yes 2 → CONTINUE WITH Q.11

11. If so, for what grade level specialties is training in the instructional uses of computers required for students preparing to teach?

(Circle all that apply.)

- a. Early childhood 1
- b. Elementary school 2
- c. Secondary school 3
- d. Adult Basic Education 4
- e. All of the above 5

12. Which of the following describe the types of teacher training programs in the instructional uses of computers required for pre-service students?

(Circle all that apply.)

- a. Module(s) within an education course 1
- b. A full course 2
- c. Summer institutes 3
- d. Workshops 4
- e. Other (please specify) 5

13. What are your School/Department of Education's plans regarding future training in the instructional uses of computers?

(Circle all that apply.)

- a. Adding new qualified faculty 1
- b. Adding new courses 2
- c. Phasing out certain courses 3
- d. Expanding facilities and/or equipment 4
- e. Initiating a joint program with local industry 5
- f. Increasing emphasis on training in the selection of software 6
- g. Decreasing emphasis in the training of the operation of equipment 7

14. Does your School/Department have formal (written) policies concerning computer literacy (above and beyond any institution-wide policies) that all teacher education students should achieve?

(Circle one.)

- No 1 → GO TO Q.16
- Yes 2 → CONTINUE WITH Q.15

15. Which of the following elements do your School/Department's formal computer literacy policies include?

(Circle all that apply.)

- a. Students should take an introductory course in computers for credit 1
- b. Students should be able to write a simple computer program 2
- c. Students should be able to document their own programming 3
- d. Students should be able to test and debug simple programs 4
- e. Students should know how to develop simple computer-oriented algorithms 5
- f. Students should be able to document their own algorithms 6
- g. Students should know general operations or procedures for using canned software (e.g., loading, backup, listing, saving, deleting, running programs) 7
- h. Students should know what general types of problems are (and are not) amenable to computer solution 8
- i. Students should understand the potential use of large bodies of quantitative data in a particular field of study 9
- j. Students should be familiar with the social implications of computer use (e.g., job loss from automation) 10
- k. Students should be familiar with the ethical issues associated with computer use (e.g., data privacy, copyrights, electronic trespass) 11
- l. Other (please specify) 12

SECTION C: VIDEO AND AUDIO TECHNOLOGIES

16. During the 1984-85 school year, has the School/Department of Education offered to students (directly or through cooperative arrangements within your own institution or with another institution/organization) teacher training in the instructional uses of VIDEO technologies (please refer to definition on page 1)?

(Circle one.)

- No 1 → GO TO Q.24
- Yes 2 → CONTINUE WITH Q.17

17. Which of the following types of training in the instructional uses of video technologies does the School/Department of Education offer or require?

(Circle all that apply on each line.)

	Require for In-Service Students	Require for Pre-Service Students	Offer But Do Not Require	Do Not Offer
a. Training in the selection of video/TV programs for use in instruction	1	2	3	4
b. Training in the production or design of video/TV programs for use in instruction	1	2	3	4
c. Training in the use of live interactive television for instruction	1	2	3	4
d. Training in the integration of video use with general instructional objectives	1	2	3	4
e. Training in the integration of video with overall curriculum content	1	2	3	4
f. Training in the use of video enhancements with computers	1	2	3	4
g. Training in the operation of equipment	1	2	3	4

18. Which of the following describe the types of programs in teacher training that your institution offers for the instructional uses of video technologies?

(Circle all that apply.)

a. Module(s) within an education course	1
b. A full course	2
c. Summer institutes	3
d. Workshops	4
e. Other (please specify)	5

19. Who is responsible for conducting this training?

(Circle all that apply.)

a. School/Department of Education faculty	1
b. Specialized audio/video staff	2
c. Other faculty within my institution	3
d. School districts	4
e. Local public TV station personnel	5
f. Other private industry	6
g. Outside consultants	7
h. Other (please specify)	8

20. How many students are receiving this training during the current term?

(If none, enter zero.)

a. Number of undergraduate students	_____
b. Number of pre-service graduate students	_____
c. Number of in-service graduate students	_____

21. Is any teacher training in the instructional uses of video technologies required of any pre-service students?

(Circle one.)

- No 1 → GO TO Q.24
 Yes 2 → CONTINUE WITH Q.22

22. If so, at what grade levels is training in the instructional uses of video technologies required of any pre-service students?

(Circle all that apply.)

- a. Early childhood 1
 b. Elementary school 2
 c. Secondary school 3
 d. Adult Basic Education 4
 e. All of the above 5

23. Is training offered by the School/Department in the instructional uses of video technologies differently for graduate students than for undergraduate students?

(Circle all that apply.)

- a. School/Department does not have a graduate program 1
 b. No, training program is about the same for graduate and undergraduate students 2
 c. Yes, amount of training is very different for graduate students 3
 d. Yes, kind of training is very different for graduate students 4

24. During the 1984-85 school year, has the School/Department of Education offered to students (directly or through cooperative arrangements within your own institution or with another institution/organization) any teacher training in the instructional uses of AUDIO technologies (please refer to definition on page 1)?

(Circle one.)

- No 1 → GO TO Q.28
 Yes 2 → CONTINUE WITH Q.25

25. Which of the following types of training in the instructional uses of audio technologies does the School/Department of Education offer or require?

(Circle all that apply on each line.)

	Require for In-Service Students	Require for Pre-Service Students	Offer But Do Not Require	Do Not Offer
a. Training in the use of audio conferencing in instruction	1	2	3	4
b. Training in the selection of audio materials for use in instruction	1	2	3	4
c. Training in the production or design of audio materials for use in instruction	1	2	3	4
d. Training in the use of music/speech synthesizers in instruction	1	2	3	4
e. Training in the integration of audio use with overall instructional methods	1	2	3	4
f. Training in the integration of audio use with overall curriculum content	1	2	3	4
g. Training in the operation of equipment	1	2	3	4

26. How many students are receiving this training during the current term? (If none, enter zero.)

- a. Number of undergraduate students
- b. Number of pre-service graduate students
- c. Number of in-service graduate students

27. Is training offered by the School/Department in the instructional uses of audio technologies differently for graduate students than for undergraduate students?

(Circle all that apply.)

- a. School/Department does not have a graduate program 1
- b. No, training program is about the same for graduate and undergraduate students 2
- c. Yes, amount of training is very different for graduate students 3
- d. Yes, kind of training is very different for graduate students 4

28. What are your School/Department of Education's plans regarding future training in the instructional uses of video and audio technologies?

(Circle all that apply under each column.)

	Video Technologies	Audio Technologies
a. Adding new qualified faculty	1	1
b. Adding new courses	2	2
c. Phasing out certain courses	3	3
d. Expanding facilities and/or equipment	4	4
e. Initiating a joint program with local industry	5	5
f. Increasing emphasis on training in the selection of media and program materials	6	6
g. Decreasing emphasis in the training of the operation of equipment	7	7

SECTION D: AVAILABILITY OF EQUIPMENT AND PROGRAM MATERIALS

29. Which of the following types of media equipment are available and readily accessible (i.e., can generally be used when needed) to the School/Department of Education for use in training of teacher education students?

(Circle only one on each line.)

	Available and Readily Accessible	Available But Not Readily Accessible	Not Available
a. Television sets	1	2	3
b. Videocassette/videotape recorders	1	2	3
c. Videodisc players	1	2	3
d. Video cameras	1	2	3
e. Radios	1	2	3
f. Audiocassette/tape recorders	1	2	3
g. Audio conferencing facilities	1	2	3
h. Record players	1	2	3
i. Pocket calculators (programmable)	1	2	3
j. Microcomputers	1	2	3
k. Word processors	1	2	3
l. Computer modems	1	2	3
m. Terminals connected to mini/mainframe computers	1	2	3
n. Local area microcomputer networks	1	2	3
o. Interactive videodisc players (with computers for control)	1	2	3
p. Videotex terminals	1	2	3
q. Teletext converters	1	2	3

30. Does your School/Department of Education have an instructional materials center or other central collection that contains any of the following for use by faculty or students?

(Circle all that apply.)

- a. Videocassettes/tapes or videodiscs 1
- b. Interactive videodisc packages with computer software 2
- c. Audiocassettes/tapes or records (music only) 3
- d. Audiocassettes/tapes or records (excluding music only) 4
- e. Instructional courseware for micros 5
- f. Modular software for programmed instruction on micros 6
- g. Business applications software (e.g., VisiCalc) for micros 7
- h. Word processing software (e.g., Wordstar) for micros 8
- i. Computer-based instructional management software for micros 9
- j. Statistical analysis packages for micros 10
- k. Data base systems for micros (e.g., dBase II) 11
- l. Microcomputer software documentation 12
- m. Mainframe software documentation 13
- n. None of the above 14

Thank you for taking the time to fill out this questionnaire.

If we should need to contact you regarding the questionnaire, what is the best time to call? _____

What is your telephone number?

--	--	--	--	--	--	--	--	--	--	--	--

Area Code Number

To receive a summary report of the findings of this study, check here ☐ and supply us with your:

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Corporation for Public Broadcasting

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(202) 293-6160

The Corporation for Public Broadcasting (CPB) was established as a result of the Public Broadcasting Act of 1967 to promote the development of a diversified public television and radio service for all of the American people.

The Corporation, *neither an agency nor an institution of the Federal Government*, was created as a free-standing, private, non-profit corporation to insure its independence as the public's representative in public broadcasting.

Its authority to act in the public interest stems from the 1967 legislation. Among CPB's responsibilities are:

- Supporting public radio and television stations with direct grants to help meet operating and programming costs;
- Providing funds for the production and acquisition of innovative and high-quality programs for national distribution;
- Safeguarding the independence of local licensees and the freedom of expression within a decentralized public broadcasting community;
- Acting as the trustee for the funds appropriated by the Congress or contributed to CPB by other sources;
- Advancing the technology and application of delivery systems;
- Conducting research in matters relating to non-commercial educational television.

Appendix B

Summary of HEUS-85 Study Design and Survey Methodology

Appendix B

Summary of HEUS-85 Study Design and Survey Methodology

A. The HEUS-85 Universe of Institutions

The HEUS-85 study design called for a census survey of all public and private, two-and four-year postsecondary collegiate institutions included in the latest available Higher Education Directory,* as well as some strictly graduate or professional schools contained in the directory. The latter schools have no undergraduate offerings and were included in the study universe primarily to maintain some comparability with the HEUS-79 universe. Initially, a total of 2,842 institutions were identified from the HEP file as eligible for the HEUS-85 survey. However, subsequent activities identified a number of these institutions as "frame errors" (e.g., closed schools, central offices) and the final total number of institutions comprising the study universe was determined to be 2,830, including**:

No. of schools with no teacher education program	1,628
No. of schools with teacher education program	<u>1,202</u>
Total No. of Schools	2,830

B. Data Collection Activities

The HEUS-85 study objectives and research questions required that data be collected from individuals most knowledgeable about (1) video/audio, (2) computers, and (3) where applicable, teacher preparation at the institutional level. Survey questionnaires (Appendix A) were developed for completion by each of these three respondent types (i.e., an Instructional Video/ Audio Questionnaire, a Computers for Instruction Questionnaire, and a Teacher Education Questionnaire).

It was thought that response rates might be increased if the study was endorsed by well-known and respected organizations with which institutional officers and potential respondents might be affiliated. Therefore, appropriate endorsements were obtained from the American Association of Community and Junior Colleges (AACJC), the American Association of State Colleges and Universities (AASCU), the American Council on Education (ACE), the Association of American Colleges (AAC), the Association of American Universities (AAU), the Association of Physical Plant Administrators of Universities and Colleges (APPAUC), the Council of Independent Colleges (CIC), the National Association of State Universities and Land Grant Colleges (NASULGC), and the National University Continuing Education Association (NUCEA). The endorsement of these

* Higher Education Publications, Inc., The HEP 1984 Higher Education Directory, Washington, DC: Author, 1984.

** Excluded from the 1983-84 HEP file were: schools with illegal FICE codes, all campus summary codes, central offices, all system summary codes, system offices, joint libraries, schools "no longer eligible," schools in outlying territories, schools with no names, proprietary schools, non-degree-granting specialty schools, other schools offering only a diploma or certificate, graduate centers for research only, service schools other than the U.S. Academies, divinity schools that do not offer liberal arts and sciences or teacher education programs, and blank codes.

agencies/organizations was indicated on the cover of the study questionnaires and in the margin of special study stationery used for all correspondence during the survey.

Data were collected during the period December 1984 through May 1985 by mail with telephone followup (prompting and interviews) of mail nonrespondents. However, since the most appropriate individuals were not identified beforehand at each institution to complete the three study questionnaires, the first step involved a prenotification of all eligible institutions. Prenotification letters were mailed to the Chief Executive Officer of all institutions identified as the population of interest explaining the nature and importance of the study, and requesting that the CEO complete an enclosed postage-paid postcard identifying appropriate individuals to whom the institutional questionnaires should be sent. Nonresponding institutions were called in an attempt to obtain these names by telephone. The prenotification process obtained directory information on (up to) three staff members at 2,786 responding institutions.

Subsequent HEUS-85 survey activities consisted of: (1) an initial questionnaire mailing to all institutional staff members identified in the prenotification stage; (2) a follow-up thank you/reminder postcard to all individuals one week after initial mailout; (3) a second questionnaire mailout to previously nonresponding individuals about two weeks later; (4) telephone prompting and/or attempts to obtain questionnaire telephone interviews with all mail nonrespondents (who had not previously refused); and (5) a third follow-up questionnaire mailing to all nonrespondents to the Teacher Education Questionnaire second mailout and to all telephone-prompted nonrespondents who requested it on the Video/Audio and Computer Questionnaires.

The cut-off date for data collection activities (i.e., for acceptance of returned questionnaires or completed telephone interviews) was May 25, 1985. Final response rates for the three questionnaires are shown on Table B.1.

C. Data Receipt and Document Control

All questionnaires and prenotification postcards returned by mail were received and batched at a centralized location. Questionnaires completed during telephone interviews were likewise batched and forwarded for receipt control data entry. Postcards were batched and forwarded to receipt control entry, where institutional staff names (provided as appropriate questionnaire respondents) were entered into the control system through direct key-to-tape data entry.

D. Manual Editing/Coding

It was determined that manual editing/coding should define simple procedures and that more complex editing steps and/or imputations should be left to the more efficient and accurate computer-edit stage. Therefore, the manual editing/coding rules defined were principally to make provided responses more compatible with subsequent data entry operations. Editors/coders were trained and given a manual that completely specified general editing/coding rules for the basic item formats.

E. Data Entry

Direct key-to-tape data entry was used for all returned questionnaires. Keying was controlled by data entry programs designed for the specific documents keyed (the three forms of questionnaires), and questionnaire design allowed keying of data directly from the hard copy documents (as edited/coded in the manual edit stage). All keyed data were 100 percent key verified.

F. Machine Editing/Coding

The basic principles determining the machine processing of data were: (1) assurance of an accurate, magnetic transcription of the questionnaire responses and (2) production of a file that would provide flexibility for subsequent analytic decisions. Resolution of errors detected in processing took two basic forms. For cases in which error pattern or frequency suggested coding or keying error, hard-copy documents were consulted. When resolution from hard copy was not suggested or realized, the data elements that were in error were appropriately "flagged" for identification during subsequent analysis.

G. Weighting

Equal weights were assigned to all members in the study universe; these weights were subsequently adjusted for instrument nonresponse in an attempt to reduce, to the extent possible, potential bias resulting from such non-response. These adjusted weights were then used for estimating results for the total population of institutions or teacher education programs in the nation.

H. Additional Technical Documentation

The following publications provide complete detail and technical documentation pertaining to the HEUS-85 survey design or methodology:

1. Burkheimer, G. J. and Ciftan, E. A. Data Base Design for the Higher Education Utilization Study: HEUS-85. Research Triangle Park, NC: Research Triangle Institute, August 1985.
2. Burkheimer, G. J. and Whitmore, R. W. Higher Education Utilization Study (HEUS-85): Final Methodology Report. Research Triangle Park, NC: Research Triangle Institute, December 1985.

Appendix C
Study Advisory Committee

Table B.1
Questionnaire Response Rates by Type of Institution

Type of Institutions	Total Number of Institutions	Questionnaire Response					
		Video/ Audio		Computer		Teacher Education	
		N	%	N	%	N	%
All Institutions	2830	2410	(85)	2439	(86)	NA	NA
Two-Year Institutions:							
Public	926	824	(89)	805	(87)	NA	NA
Private	180	149	(83)	147	(82)	NA	NA
Total	1106	973	(88)	952	(86)	NA	NA
Four-Year Institutions:							
Public	541	444	(82)	468	(87)	NA	NA
Private	1073	897	(84)	927	(86)	NA	NA
Total	1614	1341	(83)	1395	(86)	NA	NA
Professional/Graduate Schools Only	110	96	(87)	92	(84)	NA	NA
Institutions with Teacher Education Programs	1202	NA	NA	NA	NA	1101	(92)

Appendix C

Study Advisory Committee

The successful completion of this study would not have been possible without the expert advice and guidance of the Study Advisory Committee. Members of the HEUS-85 advisory committee were:

Brian Brightly
President
Adult Learning Listening Network

John Lott Brown
President
University of South Florida
Central Educational Network

Dave Bunting
Director of Non-Traditional Studies
Kirkwood Community College

Stephen Ehrmann
Program Officer
Fund for the Improvement of
Postsecondary Education

Kerry Johnson
Director, Center for Instructional
Development and Evaluation
University of Maryland

Greg Epler Wood
Mid-Atlantic Regional Coordinator
National Federation of Local Cable
Programmers

Carol Koffarnus
Vice President for Postsecondary
Telecommunications
Central Education Network

Raymond Lewis
Research Director
Center for Learning and
Telecommunications
American Association of Higher
Education

Jane Richards
Executive Director
Indiana Higher Education
Telecommunications System

Ilona Turisi
Director, Education Services
Acorn Computers

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(HEUS-85 Final Report)

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SECTION III: AVAILABILITY
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Table 1
Percentage of Institutions Reporting Availability of Various
Types of Computer Facilities/Equipment for Faculty and/or Student Instructional Use,
By Level of Offering and Type of Control, 1984-85^a

Computer Facilities/Equipment	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Institution's mainframes or minicomputers	84%	38%	77%	94%	72%	79%	52%	88%	65%	77%
Regional public computer service	10	5	9	22	7	12	6	14	7	11
Commercial computer service	4	4	4	6	4	5	10	4	5	5
Microcomputers (stand-alone)	90	75	87	91	84	86	65	90	81	86
Local area networks	20	8	18	37	18	24	13	26	16	21
Other	6	3	5	6	5	5	10	6	5	5
None of the above	1	18	4	1	7	5	22	1	10	5
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 8 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all institutions.

Table 2
AVERAGE NUMBER OF MAINFRAME/MINICOMPUTERS PER INSTITUTION,
BY LEVEL OF OFFERING AND TYPE OF CONTROL, 1984-85^a

		Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
		Public	Private	Total	Public	Private	Total				
Mainframe/Minicomputers per institution:											
	Mean	5.48	1.94	5.23	7.42	5.48	6.26	8.29	6.25	5.23	5.84
	Median	2.00	1.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00
	Mode	1	1	1	2	1	1	1	1	1	1
Estimated Population Size		863	140	1003	517	921	1438	77	1403	1115	2518

^a As determined from Item 35 of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions with computers available.

Table 3
 Percentage of Institutions Offering Access to Mainframes/Minicomputers
 Using Terminals From Outside.
 By Level of Offering and Type of Control, 1984-85^a

Mainframe/Mini Accessible Through Terminals Outside the Institution	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of Institutions	35%	23%	34%	79%	60%	68%	70%	53%	57%	55%
Estimated Population Size	778	67	845	510	772	1282	58	1315	870	2185

^a As determined from Item 13 of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions with mainframes/minicomputers available.

Table 4
Percentage of Institutions Reporting Various Types of Instructional
Software Installed on Mainframe/Minicomputer,
By Level of Offering and Type of Control, 1984-85^a

Type of Software	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Statistical Analysis Packages	51%	19%	49%	96%	75%	84%	76%	70%	71%	70%
Simulation Software	24	14	23	66	44	53	29	41	41	41
Data base management systems	48	35	47	69	55	61	57	57	54	56
Other	15	12	15	16	17	16	17	16	17	16
None of the above	24	45	25	2	13	9	12	14	16	15
Estimated Population Size	778	67	845	510	772	1282	58	1315	870	2185

^a As determined from Item 11 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions with mainframes/minicomputers available.

Table 5
Number of Stand-Alone Microcomputers Available
By Level of Offering and Type of Control, 1984-85^a

No. of Micros Available	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
10 or fewer	4%	21%	6%	2%	19%	13%	26%	3%	20%	11%
11 to 50	55	70	57	29	57	47	48	45	58	51
51 to 100	26	7	24	23	13	17	15	25	12	19
101 to 250	14	0	12	28	7	14	7	19	6	13
More than 250	1	2	1	18	4	9	4	8	4	6
Estimated Population Size	832	134	966	492	900	1392	71	1345	1084	2429

^a As determined from Item 35b of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions with micros available.

Table 6
Percentage of Institutions Reporting Requiring Undergraduate
Students to Own or Acquire a Microcomputer for Coursework,
By Level of Offering and Type of Control, 1984-85^a

Undergraduate Requirement to Own/Acquire Microcomputer	Two-Year			Four-Year			Total	Total	Total ^b
	Public	Private	Total	Public	Private	Total	Public	Private	
Requirement for all students	*	1%	*	0%	1%	*	*	1%	*
Requirement for undergraduate students in certain fields of study	7	4	7	7	6	7	7	6	7
No requirement	92	95	93	92	93	93	92	93	93
Estimated Population Size	926	180	1106	541	1073	1614	1467	1253	2720

^a As determined from Item 25 of the Computers for Instruction Questionnaire.

^b Analysis based on all institutions with undergraduate students.

* Represents a positive percentage less than 0.5.

Table 7
 Percentage of Institutions Planning/Considering Policy
 Requiring Undergraduate Students to Own/Acquire Microcomputers,
 By Level of Offering and Type of Control, 1984-85^a

Planning/Considering Policy Requiring Microcomputer Ownership	Two-Year			Four-Year			Total	Total	Total ^b
	Public	Private	Total	Public	Private	Total	Public	Private	
Percentage of Institutions	3%	7%	4%	12%	13%	13%	7%	12%	9%
Estimated Population Size	854	173	1027	500	1000	1500	1354	1173	2527

^a As determined from Item 26 of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions with no policy requiring undergraduates to own microcomputers.

Table 8
 Percentage of Institutions Reporting Availability
 of Mainframe/Minicomputer Software Documentation in Central Collection,
 By Level of Offering and Type of Control, 1984-85^a

Availability of Central Collection of Mainframe/Mini Software Documentation	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of Institutions	55%	40%	54%	76%	68%	71%	51%	63%	65%	64%
Estimated Population Size	778	67	845	510	772	1282	58	1315	870	2185

^a As determined from Item 10 of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions with mainframes/minicomputers available.

Table 9
Percentage of Institutions Reporting Various Types of
Microcomputer Software Available in Central Collections,
By Level of Offering and Type of Control, 1984-85^a

Type of Microcomputer Software	Two Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Business Applications Software	84%	70%	82%	77%	79%	79%	65%	82%	77%	80%
Word Processing Software	88	83	88	80	85	83	79	85	84	85
Computer-based instructional management software	49	36	7	46	35	39	41	48	35	43
Statistical Analysis packages	39	18	37	55	48	50	54	46	44	45
Data base systems	71	54	69	69	62	65	64	70	61	66
Communications software	28	16	26	47	35	39	48	35	33	34
Microcomputer software documentation	53	49	52	62	59	60	56	57	58	57
None of the above	7	9	7	6	7	7	15	7	8	7
Estimated Population Size	832	134	966	492	900	1392	71	1345	1084	2429

^a As determined from Item 10 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions with micros available.

Table 10
Most Important Computer-Related Need for Students,
By Level of Offering and Type of Control, 1984-85^a

Most Important Computer-Related Need for Students	Two-Year			Four-Year			Total Prof./Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
More Computer Software	42%	42%	42%	27%	34%	32%	23%	36%	35%	35%
More Work Stations or Terminals	50	44	49	62	53	56	67	55	53	54
More Storage Capacity	3	5	4	3	5	4	0	3	4	4
More Peripherals	5	9	5	8	8	8	10	6	8	7
Estimated Population Size	863	140	1003	517	921	1438	77	1403	1115	2518

^a As determined from Item 34-1 of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions with computers available.

Table 11
Most Important Computer-Related Need for Faculty^a
By Level of Offering and Type of Control, 1984-85^b

Most Important Computer-Related Need for Faculty	Two-Year			Four-Year			Total Prof./Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
More Computer Software	47%	53%	48%	30%	39%	36%	32%	40%	40%	40%
More Work Stations or Terminals	47	38	46	59	53	55	56	52	51	52
More Storage Capacity	3	1	2	3	3	3	3	3	3	3
More Peripherals	3	8	4	8	5	6	9	5	6	5
Estimated Population Size	863	140	1003	517	921	1438	77	1403	1115	2518

^a As determined from Item 34-2 of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions with computers available.

Table 12
Most Important Computer-Related Need for Administrators,
By Level of Offering and Type of Control, 1984-85^a

Most Important Computer- Related Need for Administrators	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
More Computer Software	39%	43%	40%	35%	36%	36%	45%	38%	37%	37%
More Work Stations or Terminals	38	31	37	42	38	39	32	39	37	38
More Storage Capacity	13	19	14	14	15	15	13	14	16	15
More Peripherals	10	7	9	9	11	10	10	9	10	10
Estimated Population Size	863	140	1003	517	921	1438	77	1403	1115	2518

^a As determined from Item 34-3 of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions with computers available.

Table 13
Past Three-Year Change in Computer Resources,
By Level of Offering and Type of Control, 1984-85^a

Three-Year Change in Computer Resources	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Computer resource configuration has remained about the same	14%	30%	16%	7%	19%	15%	15%	11%	20%	15%
Shift from reliance on one to use of several mainframe/ minicomputers	27	11	25	49	32	38	26	35	30	33
Computer activities diverted from mainframe/minicomputers to stand-alone microcomputers	74	63	73	78	67	71	74	75	67	72
Estimated Population Size	863	140	1003	517	921	1438	77	1403	1115	2518

^a As determined from Item 36 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions with computers available.

Table 14
Percentage of Institutions Reporting Availability of Various Video Central
Reception Facilities,
By Level of Offering and Type of Control, 1984-85^a

Central Reception Facility	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Master TV antenna	42%	25%	40%	35%	25%	29%	22%	40%	25%	33%
Community cable system drop(s)	53	36	50	61	40	47	20	55	38	47
ITFS reception equipment	7	0	6	14	3	7	6	10	3	6
Fixed satellite receive-only dish	9	2	8	27	7	13	5	15	6	11
Rotatable satellite receive- only dish	15	3	13	23	6	12	6	18	5	12
Other microwave reception equipment	6	0	5	19	3	8	6	11	2	7
Satellite transmission antenna ("uplink")	1	0	1	5	1	2	0	2	1	2
None of the above	19	46	23	19	41	34	57	19	43	31
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 42 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all institutions.

Table 15
Percentage of Institutions Reporting Availability of Various
Video Distribution/Exhibition Facilities,
By Level of Offering and Type of Control, 1984-85^a

Video Distribution/ Exhibition Facility	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Campus closed-circuit TV (on-campus origination)	40%	17%	37%	53%	21%	32%	48%	45%	21%	34%
Campus buildings wired by community cable TV system	36	32	35	44	31	35	12	39	29	34
Special video or film screening/projection room	59	51	58	74	64	67	62	65	62	63
ITFS transmission equipment	5	1	5	12	3	6	4	8	2	5
Non-commercial television broadcast station	9	7	9	23	7	12	5	14	7	11
Community cable TV system educational/access channels	36	26	35	41	24	30	11	38	23	31
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 43 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all institutions.

Table 16
Percentage of Institutions Reporting Availability of Various
Audio Distribution/Exhibition Facilities.
By Level of Offering and Type of Control, 1984-85^a

Audio Distribution/ Exhibition Facility	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Non-commercial radio broadcast station	14%	11%	13%	51%	32%	38%	2%	27%	28%	27%
Audio conferencing facilities	17	4	15	27	9	15	20	21	9	15
Music/speech synthesizers	11	4	10	30	14	19	1	18	12	15
Language labs	48	36	46	81	61	68	4	59	55	57
Music listening rooms	42	41	42	75	63	67	4	53	57	55
Central public address system	21	18	20	14	18	17	30	18	19	18
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 43 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all institutions.

Table 17
Percentage of Institutions Reporting Various Video/Audio Materials
Available in Instructional Materials Centers,
By Level of Offering and Type of Control, 1984-85^a

Video/Audio Materials	Two Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Videocassettes/tapes or video-discs	96%	75%	93%	94%	85%	88%	83%	95%	83%	90%
Interactive videodisc packages with computer software	17	13	17	24	10	15	18	20	10	16
Audiocassettes/tapes or records (music only)	83	61	79	85	79	81	17	82	73	78
Audiocassettes/tapes or records (excluding music only)	89	72	86	86	78	81	77	88	77	83
None of the above	3	16	5	3	9	7	14	3	11	7
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 41 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all institutions.

SECTION IV: USE
(Tables 18 through 55)

Table 18
Uses of Computers by Students, Faculty, and Administrators.
By Level of Offering and Type of Control, 1984-85^a

Uses of Computers	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Students:										
For hands-on use in learning about the use of computers	99%	94%	98%	98%	95%	96%	63%	98%	93%	96%
Programmed exercises, tutorials, drills	88	73	86	87	75	79	64	87	74	81
Instructional use of general purpose applications software	94	83	93	99	91	94	64	95	89	92
Instructional communications with faculty	13	5	12	39	27	31	21	23	24	23
Taking exams or tests	46	30	44	47	32	37	23	46	31	39
Control of lab instruments, apparatus, machinery	43	14	39	69	48	55	46	52	44	49
Research and bibliographic	29	20	28	83	57	66	72	49	54	51
Faculty:										
Hands-on use in learning about the use of computers	87	77	85	89	83	85	71	87	81	85
Instructional use of general purpose applications software	91	82	90	98	90	93	85	93	89	91
Instructional communications with students	14	5	13	41	31	34	26	24	27	25
Administrative use of general purpose applications software	82	73	81	90	77	82	83	85	77	81
Administrative use of special-purpose software	70	64	69	84	68	74	75	75	68	72
Instructional management and assessment	57	35	54	67	43	52	44	61	42	53
Control of lab instruments, apparatus, machinery	41	17	38	74	48	57	56	54	45	50
Research and bibliographic	42	25	40	90	67	75	85	60	63	61

Table 18 (continued)
Uses of Computers by Students, Faculty, and Administrators,
By Level of Offering and Type of Control, 1984-85^a

Uses of Computers	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Administrators:										
Administrative use of general purpose applications software	83%	75%	82%	88%	84%	86%	83%	85%	83%	84%
Administrative use of special- purpose software	83	75	82	88	82	84	75	85	81	83
Counseling	59	26	55	49	32	38	6	55	30	44
Outreach	23	16	22	27	19	22	14	24	18	22
Electronic publishing	16	7	15	27	20	22	17	20	18	19
Archiving or bulk storage of library materials in elec- tronic form	21	9	20	30	19	23	25	25	19	22
Estimated Population Size	863	140	1003	517	921	1438	77	1403	1115	2518

^a As determined from Item 4 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions with computers available.

Table 19
Perceived Fastest Growing Student Use of Computers
By Level of Offering and Type of Control, 1984-85^a

Student Use of Computers	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
For hands-on use in learning about the use of computers	44%	44%	44%	34%	40%	38%	14%	40%	39%	39%
Programmed exercises, tutorials, drills	13	16	13	8	6	7	23	12	8	10
Instructional use of general- purpose applications software	42	37	41	55	51	52	35	47	49	48
Instructional communications with faculty	0	0	0	1	1	1	2	*	1	1
Taking exams or tests	*	2	1	1	*	*	2	*	1	1
Control of lab instruments, apparatus, machinery	0	0	0	*	*	*	2	*	*	*
Research and bibliographic	*	1	1	1	1	1	22	1	2	1
Estimated Population Size	855	133	988	508	875	1383	60	1375	1048	2431

^a As determined from Item 5a of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions where students use computers.

* Represents a positive percentage less than 0.5.

Table 20
Perceived Fastest Growing Faculty Use of Computers
By Level of Offering and Type of Control, 1984-85^a

Faculty Use of Computers	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
For hands-on use in learning about the use of computers	25%	18%	24%	17%	16%	16%	15%	22%	16%	19%
Instructional use of general- purpose applications software	56	56	56	60	63	62	42	57	61	59
Instructional communications with students	1	1	1	2	2	2	0	1	2	1
Administrative use of general- purpose applications software	5	12	6	6	9	8	15	6	9	7
Administrative use of special- purpose software	4	6	4	3	3	3	7	3	4	4
Instructional management and assessment	7	7	7	3	3	3	2	6	4	5
Control of lab instruments, apparatus, machinery	1	0	1	*	*	*	5	1	*	1
Research and bibliographic	1	0	1	9	4	6	14	4	4	4
Estimated Population Size	794	119	913	507	847	1354	70	1344	1059	2403

^a As determined from Item 5b of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions where faculty use computers.

* Represents a positive percentage less than 0.5.

Table 21
Perceived Fastest Growing Administrator Use of Computers,
By Level of Offering and Type of Control, 1984-85^a

Administrator Use of Computers	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Administrative use of general-purpose applications software	55%	39%	53%	60%	51%	54%	57%	57%	50%	54%
Administrative use of special-purpose software	39	51	40	36	45	42	39	37	45	41
Counseling	4	2	4	2	2	2	0	3	2	2
Outreach	*	3	1	1	1	1	2	1	1	1
Electronic publishing	1	2	1	0	*	*	0	*	1	1
Archiving or bulk storage of library materials in electronic form	1	3	1	1	1	1	2	1	1	1
Estimated Population Size	716	110	826	460	783	1243	65	1204	930	2134

^a As determined from Item 5c of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions where administrators use computers.

* Represents a positive percentage less than 0.5.

Table 22
Percentage of Institutions Reporting Various Administrative Systems
Currently Computerized,
By Level of Offering and Type of Control, 1984-85^a

Type of Administrative System	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Course offerings	77%	32%	70%	79%	63%	69%	36%	77%	57%	68%
Standardized test scores	24	13	22	50	25	33	21	34	23	29
Student grade records	91	48	84	93	77	82	60	91	72	82
Enrollment projections	40	23	38	52	41	45	31	44	38	41
Student financial aid program	57	35	54	71	58	62	31	62	53	58
Fund raising	13	29	16	46	59	55	40	26	54	39
Payroll	85	50	80	89	74	79	68	87	71	79
Other	22	19	21	15	23	20	18	19	22	20
None of the above	2	23	6	1	9	6	20	2	12	7
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 6 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all institutions.

Table 23
Percentage of Institutions Reporting Various Administrative Systems
Scheduled to be Computerized Next Year,
By Level of Offering and Type of Control, 1984-85^a

Type of Administrative System	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Course offerings	7%	24%	9%	6%	12%	10%	20%	7%	13%	10%
Standardized test scores	16	18	17	9	12	11	5	13	13	13
Student grade records	5	28	8	4	9	7	12	5	11	7
Enrollment projections	22	28	23	15	18	17	22	20	19	19
Student financial aid program	22	36	24	15	18	17	27	19	21	20
Fund raising	28	22	27	25	17	19	15	26	17	22
Payroll	5	15	7	4	7	6	5	5	8	6
Other	7	7	7	9	6	7	3	8	6	7
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 6 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all institutions.

Table 24
Allocation of Computer Use
By Level of Offering and Type of Control, 1984-85^a

Type of Use	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Administration	37%	33%	36%	39%	44%	42%	49%	38%	43%	40%
Instruction	60	63	60	46	47	47	23	54	48	51
Research	2	2	3	14	7	10	25	7	7	8
Other	1	2	1	1	2	1	3	1	2	1
Estimated Population Size	863	140	1003	517	921	1438	77	1403	1115	2518

^a As determined from Item 39 of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions with computers available.

Table 25
Percentage of Institutions Reporting Use of Mainframe/Minicomputers
With Various Peripherals,
By Level of Offering and Type of Control, 1984-85^a

Peripheral	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Videocassette recorders or linear access videodisc players	4%	2%	4%	1%	3%	3%	4%	4%	3%	4%
Random access videodisc players	1	2	1	3	2	2	5	2	2	2
Compact audio discs	1	0	*	1	*	*	0	1	*	*
Voice synthesizers	3	0	3	7	2	4	2	5	2	4
Music synthesizers	1	0	1	7	4	6	0	4	3	4
Videotex terminals	4	5	4	7	3	5	2	6	3	5
Graphics peripherals	35	11	33	69	48	56	45	51	44	48
None of the above	58	82	61	28	49	41	50	44	52	48
Estimated Population Size	778	67	845	510	772	1282	58	1315	870	2185

^a As determined from Item 9 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions with mainframe/minicomputers available.

* Represents a positive percentage less than 0.5.

Table 26
Percentage of Institutions Reporting Use of Microcomputers
With Various Peripherals,
By Level of Offering and Type of Control, 1984-85^a

Peripheral	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Videocassette recorders or linear access videodisc players	13%	5%	12%	19%	9%	13%	19%	16%	9%	13%
Random access videodisc players	4	0	4	14	4	7	16	8	4	6
Compact audio discs	1	0	1	2	*	1	4	2	*	1
Voice synthesizers	12	8	11	24	10	15	5	16	9	13
Music synthesizers	13	5	12	33	20	25	7	21	17	19
Videotex terminals	3	2	3	6	3	4	2	4	3	4
Graphics peripherals	59	18	53	73	49	58	51	64	45	56
None of the above	34	77	40	18	41	32	39	28	45	36
Estimated Population Size	832	134	966	492	900	1392	71	1345	1084	2429

^a As determined from Item 9 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions with micros available.

* Represents a positive percentage less than 0.5.

Table 27
 Percentage of Institutions Offering Courses Requiring
 Use of Software/Data Bases Installed on Mainframe/Minicomputers,
 By Level of Offering and Type of Control, 1984-85^a

Courses Offered Requiring Use of Mainframe/Mini Software	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of Institutions	69%	47%	67%	88%	77%	81%	46%	76%	72%	75%
Estimated Population Size	778	67	845	510	772	1282	58	1315	870	2185

^a As determined from Item 12 of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions with mainframes/minicomputers available.

Table 28
AVERAGE NUMBER OF COURSES OFFERED WHICH REQUIRE USE OF MAINFRAME/MINICOMPUTER INSTALLED SOFTWARE.
BY LEVEL OF OFFERING AND TYPE OF CONTROL, 1984-85^a

	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Courses per institution:										
Mean	7.81	3.23	7.47	31.12	12.95	20.42	11.60	17.91	12.39	15.65
Median	4.00	2.00	4.00	10.00	5.00	6.00	4.50	5.00	5.00	5.00
Mode	2	2	2	2	2	2	1	2	2	2
Estimated Population Size	537	31	568	450	594	1044	26	1004	634	1638

^a As determined from Item 12 of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions offering courses requiring mainframe/minicomputer installed software.

Table 29
Percentage of Institutions Reporting Formal Computer
Literacy Policies for Undergraduate Students,
By Level of Offering and Type of Control, 1984-85^a

Formal Computer Literacy Policies	Two-Year			Four-Year			Total	Total	Total ^b
	Public	Private	Total	Public	Private	Total	Public	Private	
No formal policy	78%	79%	78%	69%	70%	70%	74%	71%	73%
For all undergraduate students	9	9	9	11	15	14	10	15	12
Only for undergraduate students majoring in certain disciplines	13	12	13	20	15	16	16	14	15
Estimated Population Size	863	140	1003	517	921	1438	1380	1061	2441

^a As determined from Item 20 of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions with undergraduate students and computers available.

Table 30
Percentage of Institutions Reporting Various Undergraduate Programs of Study with
Computer Literacy Requirements,
By Level of Offering and Type of Control, 1984-85^a

	Two-Year			Four-Year			Total	Total	Total ^b
	Public	Private	Total	Public	Private	Total	Public	Private	
Liberal arts	20%	15%	20%	9%	9%	9%	14%	10%	12%
Education	19	14	18	40	42	41	34	40	37
Behavioral Sciences	9	0	7	13	16	15	12	15	13
Social Sciences (including history)	9	0	8	11	11	11	10	11	11
Business	82	65	80	79	84	82	81	82	81
Mathematics	45	13	41	51	57	54	49	54	51
Computer sciences	84	89	84	87	84	86	85	84	85
Life sciences	23	0	20	14	20	17	17	18	18
Physical sciences	26	21	26	33	34	34	31	34	32
Engineering	60	42	58	88	60	77	73	57	69
Design	36	0	32	7	16	10	20	14	18
Fine arts	4	0	4	3	6	4	3	5	4
Remedial basic studies (reading, math, writing)	8	15	9	2	4	3	5	5	5
Pre-medical or pre-dental	7	0	7	11	9	10	10	9	9
Pre-law	6	0	5	6	4	5	6	4	5
Other	54	50	54	27	23	25	44	26	38

^a As determined from Item 21 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions offering particular program and with formal computer literacy policies.

Table 31
Percentage of Institutions Reporting Various Elements of
Formal Computer Literacy Policies for Undergraduate Students,
By Level of Offering and Type of Control, 1984-85^a

Element of Computer Literacy Policy	Two-Year			Four-Year			Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total			
Students should take an introductory course in computers for credit	90%	93%	90%	85%	86%	86%	88%	87%	87%
Students should be able to write a simple computer program	57	68	59	65	61	63	61	62	62
Students should be able to document their own programming	36	56	39	47	45	46	42	47	44
Students should be able to test and debug simple programs	42	68	46	54	52	53	48	54	51
Students should know how to develop simple computer-oriented algorithms	32	56	36	46	41	43	39	43	41
Students should be able to document their own algorithms	21	36	23	35	34	34	28	35	31
Students should know general operations or procedures for using canned software	76	84	77	74	72	73	75	73	74
Students should know what general types of problems are (are not) amenable to computer solution	70	57	68	64	65	65	67	64	66
Students should understand the potential use of large bodies of quantitative data in a particular field of study	35	33	35	42	38	40	38	38	38
Students should be familiar with the social implications of computer use	62	63	63	49	53	52	56	54	55
Students should be familiar with the the ethical issues associated with computer use	65	63	65	54	57	56	60	58	59
Other	8	8	8	11	13	13	9	13	11
Estimated Population Size	190	30	220	160	276	436	350	306	656

^a As determined from Item 22 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions with computer literacy requirements for undergraduate students.

Table 32
Percentage of Institutions Reporting Various Areas of Formal Policy
Concerning Computer Use,
By Level of Offering and Type of Control, 1984-85^a

Policy Area of Computer Use	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Development of computer software by faculty members	20%	8%	18%	26%	17%	20%	23%	22%	18%	19%
Networking of hardware and software	15	8	14	25	15	18	17	19	14	17
Access to computers by faculty	45	44	45	68	58	60	39	53	54	53
Access to computers by students	55	55	55	69	62	65	40	60	60	60
Conversion of library holdings to electronic form	12	8	11	19	14	16	17	14	13	14
Rewiring of dormitories to accommodate computers	1	2	1	14	9	11	0	6	8	7
Rewiring of faculty offices to accommodate computers	9	7	8	27	18	21	13	15	17	16
Duplication of copyrighted software	39	19	36	43	33	36	36	40	31	36
Data security (loss prevention and safeguards against intrusion)	36	25	34	47	37	40	28	40	35	38
Privacy or confidentiality	31	19	30	47	35	39	27	37	33	35
Other	1	0	1	3	2	2	6	2	2	2
Institution has no formal policies governing computer use	30	39	31	20	29	28	38	26	31	28
Estimated Population Size	863	140	1003	517	921	1438	77	1403	1115	2518

^a As determined from Item 23 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions with computers available.

Table 33
Percentage of Institutions Reporting Various
Uses of Video Technologies,
By Level of Offering and Type of Control, 1984-85^a

Use of Video	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
One-way presentation of instruction to students on campus	89%	67%	86%	87%	81%	83%	77%	88%	79%	84%
One-way presentation of instruction to students off campus	51	10	45	47	19	28	21	50	18	35
Conferencing or two-way communications between faculty and off-campus students	7	1	6	17	4	8	10	11	4	8
Conferencing or two-way communications between faculty and students in multiple locations on campus	5	3	4	8	4	6	7	7	4	6
Pictorial enhancement of interactive programmed instruction using computers	25	23	25	31	24	27	25	27	25	26
Counseling	57	36	53	72	62	65	56	63	57	60
Outreach	60	37	57	64	48	53	43	62	46	54
Promotion/Recruitments	68	49	64	72	61	65	50	69	59	64
Staff development	58	30	53	58	41	47	44	59	39	49
Other	4	2	3	7	5	6	9	5	4	5
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 3 of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 34
Percentage of Institutions Reporting Various
Uses of Audio Technologies,
By Level of Offering and Type of Control, 1984-85^a

Uses of Audio	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
One-way presentation of instruction to students on campus	80%	68%	79%	69%	75%	73%	63%	76%	74%	75%
One-way presentation of instruction to students off campus	37	15	33	31	18	22	15	34	17	27
Conferencing or two-way communications between faculty and off-campus students	12	4	11	21	7	12	7	16	6	12
Conferencing or two-way communications between faculty and students in multiple locations on campus	7	4	7	8	7	7	2	8	5	6
Sound enhancement of interactive programmed instruction using computers	17	16	16	17	14	15	13	17	14	16
Counseling	36	32	35	47	40	44	20	42	38	39
Outreach	36	26	35	43	31	35	18	38	29	34
Promotion/recruitment	53	39	51	54	44	47	22	53	41	48
Staff development	37	32	36	37	30	32	23	36	29	34
Other	1	2	1	4	3	3	6	2	3	3
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 3 of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 35
Number and Percentage of Institutions Offering Video Telecourses,
By Level of Offering and Type of Control, 1984-85^a

Video Telecourses Offered	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of Institutions	50%	5%	43%	44%	17%	26%	13%	47%	15%	32%
Number of Institutions	462	9	471	236	180	416	14	702	200	902
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 4 and 5 of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 36
Number and Percentage of Institutions Offering Audio Courses,
By Level of Offering and Type of Control, 1984-85^a

Audio Courses Offered	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of Institutions	12%	3%	10%	10%	7%	8%	4%	11%	7%	9%
Number of Institutions	109	6	115	56	79	135	4	167	87	254
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 4 and 9 of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 37
Video Telecourse Offerings and Enrollments,
By Level of Offering and Type of Control, 1984-85^a

Video Telecourses	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Total No. of Courses Offered (All Schools)	5,285	22	5,307	2,923	1,908	4,831	456	8,230	2,364	10,594
Average No. of Courses Offered Per School	11	2	11	12	11	12	34	12	12	12
Total No. of Students Enrolled	196,022	500	196,522	154,304	44,196	198,500	4,190	351,202	48,010	399,212
Average No. of Students Enrolled Per School	414	50	407	668	252	469	310	496	246	442
Average Enrollment Per Course	36	21	36	54	24	42	9	42	21	38
Estimated Population Size	462	9	471	236	160	416	14	702	200	902

^a As determined from Item 5 and 6 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions offering video telecourses.

Table 38
Audio Course Offerings and Enrollments,
By Level of Offering and Type of Control, 1984-85^a

Audio Telecourses	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Total No. of Courses Offered (All Schools)	943	67	1010	576	2065	2641	26	1543	2133	3676
Average No. of Courses Offered Per School	9	10	9	10	26	20	7	9	25	14
Total No. of Students Enrolled	25956	1080	27036	68056	44290	112346	368	94246	45504	139750
Average No. of Students Enrolled Per School	243	152	237	1154	575	826	91	559	532	550
Average Enrollment Per Course	28	15	27	112	22	42	13	61	22	38
Estimated Population Size	109	6	115	56	79	135	4	167	87	254

^a As determined from Item 9 and 10 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions offering audio courses.

Table 39

Most Widely Used Video Telecourses, 1984-85^a

Rank Order ^b	Title of Program Series
1	New Literacy: An Introduction to Computers
2	Business of Management
3	Focus on Society
4	Understanding Human Behavior
5	Faces of Culture: Studies in Cultural Anthropolgy
6	The Growing Years
7	Personal Finance and Money Management
8	The Write Course: Introduction to College Composition
9	American Story: The Beginning to 1877
10	Heritage: Civilization and the Jews
11	Constitution: That Delicate Balance
12	Oceanus: The Marine Environment
13	Contemporary Health Issues
14	Vietnam: A Television Hsitory
15	Project Universe: Astronomy
16	It's Everybody's Business
17	Congress: We the People
18	Humanities through the Arts
19	American Government Survey
20	The Art of Being Human
21	Earth, Sea, and Sky
22	Money Puzzle: The World of Macroeconomics
23	Voyage: Challenge and Change in Career/Life Planning
24	Family Portrait: A Study of Contemporary Lifestyles
25	Cosmos

^a As determined from Item 7 of the Instructional Video/Audio Questionnaire.

^b Ranking based on total number of institutions reporting use.

Table 40

Video Telecourses with Highest Student Enrollment, 1984-85^a

Rank Order ^b	Title of Program Series
1	New Literacy: An Introduction to Computers
2	Business of Management
3	Understanding Human Behavior
4	Focus on Society
5	American Story: The Beginning to 1877
6	The Growing Years
7	Principles of Accounting
8	Introduction to Computers
9	Faces of Culture: Studies in Cultural Anthropology
10	It's Everybody's Business
11	Contemporary Health Issues
12	The Write Course: Introduction to College Composition
13	Oceanus: The Marine Environment
14	Personal Finance and Money Management
15	American Government Survey
16	The Brain
17	Project Universe: Astronomy
18	General Biology
19	The Art of Being Human
20	Humanities through the Arts
21	Vietnam: A Television History
22	Money Puzzle: The World of Macroeconomics
23	Earth, Sea, and Sky
24	American Government I
25	Heritage: Civilization and the Jews

^a As determined from Item 7 of the Instructional Video/Audio Questionnaire.

^b Ranking based on combined total student enrollment for all institutions reporting use.

Table 41

Percentage of Video Telecourse and Audio Course
Offerings By Academic Subject Area, 1984-85

Subject Area	Video Telecourses ^a	Audio Courses ^b
Education	3%	5%
Behavioral Sciences (including Psychology)	10	4
Social Sciences (including History)	23	8
Business	13	7
Mathematics	2	2
Computer Sciences	9	*
Life Sciences	5	3
Physical Sciences	3	2
Engineering	8	3
Design	*	0
Fine Arts, Performing Arts	3	17
Remedial Basic Studies	*	1
Pre-Medical or Pre-Dental	*	0
Pre-Law	*	1
Communications	2	4
English and Composition (including ESL)	4	6
Foreign Language	1	19
Health Sciences	3	7
Library Sciences	*	*
Philosophy	1	1
Recreation	*	*
Religion	1	5
Trades and Services	1	3
Humanities (including Literature)	4	0
GED	*	0
Other	4	0

^a As determined from Item 7 of the Instructional Video/Audio Questionnaire.

^b As determined from Item 11 of the Instructional Video/Audio Questionnaire.

* Represents a positive percentage less than 0.5.

Table 42

Percentage of Video Telecourse and Audio Course
By Reported Level of Course Offering

Level of Course	Video Telecourses ^a	Audio Courses ^b
Remedial	1%	3%
Lower Division	71	63
Upper Division	19	29
Graduate	9	5

^a As determined from Item 7 of the Instructional Video/Audio Questionnaire.

^b As determined from Item 11 of the Instructional Video/Audio Questionnaire.

Table 43
Percentage of Institutions Reporting Various Distribution
Methods for Video Telecourses,
By Level of Offering and Type of Control, 1984-85^a

Distribution Method	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Public television station	72%	41%	72%	56%	33%	46%	0	66%	32%	59%
Commercial television station	12	0	12	5	7	6	0	10	6	9
Cable television	59	16	58	35	19	28	0	51	17	44
Campus closed-circuit system	22	16	22	26	17	23	29	24	18	22
Instructional Television Fixed Service (ITFS)	9	0	9	15	9	12	11	11	9	11
State or regional closed circuit system	2	0	2	12	2	8	19	6	2	5
Pre-recorded video cassette or videodisc	57	43	56	53	68	59	30	55	65	57
Other	7	0	7	9	7	8	21	7	8	8
Estimated Population Size	462	9	471	236	180	416	14	702	200	902

^a As determined from Item 8 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions that offered video telecourses.

Table 44
Percentage of Institutions Reporting Various Distribution
Methods for Audio Courses,
By Level of Offering and Type of Control, 1984-85^a

Distribution Method	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Public radio station	19%	0%	18%	29%	5%	15%	0%	22%	5%	17%
Commercial radio station	7	0	7	0	0	0	0	5	0	3
Cable radio	2	0	2	7	0	3	0	4	0	3
SCA or FM subchannel	7	0	6	2	5	4	0	5	5	5
Pre-recorded audiocassette or records	61	100	63	68	93	83	100	63	93	74
Other	35	0	33	25	12	18	49	32	11	25
Estimated Population Size	109	6	115	56	79	135	4	167	87	254

^a As determined from Item 12 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions that offered audio courses.

Table 45
 Percentage of Institutions Reporting Scheduling of Video Telecourses
 at Times Outside Normal Hours of Instruction,
 By Level of Offering and Type of Control, 1984-85^a

Special Scheduling of Video Telecourses	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of Institutions	73%	57%	73%	65%	45%	57%	51%	71%	46%	65%
Estimated Population Size	462	9	471	236	180	416	14	702	200	902

^a As determined from Item 13 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions that offered video telecourses.

Table 46
 Percentage of Institutions Reporting Scheduling of Audio Courses
 at Times Outside Normal Hours of Instruction,
 By Level of Offering and Type of Control, 1984-85^a

Special Scheduling of Audio Courses	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of Institutions	49%	61%	50%	29%	35%	32%	40%	43%	36%	41%
Estimated Population Size	109	6	115	56	79	135	4	167	87	254

^a As determined from Item 13 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions that offered audio courses.

Table 47
 Percentage of Institutions Reporting Offering Video Telecourses
 Along with Parallel Non-Media Courses,
 By Level of Offering and Type of Control, 1984-85^a

Offer Parallel Non-Media Courses	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
No	15%	29%	15%	31%	56%	41%	79%	21%	55%	28%
Yes, for every course	48	71	49	30	24	28	11	41	26	39
Yes, but only for certain courses	37	0	36	39	20	31	10	38	19	33
Estimated Population Size	462	9	471	236	180	416	14	702	200	902

^a As determined from Item 16 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions that offered video telecourses.

Table 48
Percentage of Institutions Reporting Offering Audio Courses
Along with Parallel Non-Media Courses,
By Level of Offering and Type of Control, 1984-85^a

Offer Parallel Non-Media Courses	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
No	27%	59%	30%	37%	62%	51%	75%	31%	62%	41%
Yes, for every course	41	41	40	20	23	21	0	34	24	30
Yes, but only for certain courses	32	0	30	43	15	28	25	35	14	29
Estimated Population Size	109	6	115	56	79	135	4	167	87	254

^a As determined from Item 16 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions that offered audio courses.

Table 49
Percentage of Institutions Reporting Instructor Responsibility/Accessibility
for Students Participating in Video Telecourses or Audio Courses,
By Level of Offering and Type of Control, 1984-85^a

Instructor Responsible/ Accessible for Students	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
No	4%	0%	4%	3%	11%	7%	0%	4%	10%	5%
Yes, for every course	90	90	90	85	84	85	69	88	83	87
Yes, but only for certain courses	6	10	6	12	5	8	31	8	7	8
Estimated Population Size	480	15	495	240	190	430	15	724	216	940

^a As determined from Item 18 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions that offered video telecourses or audio courses.

Table 50
Percentage of Institutions Reporting Primary Means of Communication
with Faculty Responsible for Video Telecourses or Audio Courses,
By Level of Offering and Type of Control, 1984-85^a

Primary Means of Communication with Faculty	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Telephone	40%	19%	39%	43%	22%	34%	32%	41%	22%	37%
In person	42	62	43	43	68	54	60	42	67	48
Electronic mail	0	0	0	0	1	*	0	0	1	*
Correspondence	14	19	14	10	6	8	0	13	7	11
Other	4	0	4	4	3	3	8	4	3	4
Estimated Population Size	460	15	475	233	169	402	15	710	182	892

^a As determined from Item 19 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions that offered video telecourses or audio courses with responsible instructors accessible to participating students.

Table 51
 Percentage of Institutions Reporting Instructional Use of Closed-Circuit TV or ITFS of
 the Live Camera-In-The-Classroom Type,
 By Level of Offering and Type of Control, 1984-85^a

Use of Closed-Circuit TV or ITFS of the Live Camera-In-The-Classroom Type	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of institutions	27%	14%	24%	33%	23%	26%	42%	29%	23%	26%
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 27 of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 52
Percentage of Institutions Reporting Various Kinds of Student-Faculty Interaction
Associated with Courses Employing Live Camera-In-The-Classroom TV,
By Level of Offering and Type of Control, 1984-85^a

Kind of Student-Faculty Interaction	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
No simultaneous interaction	32%	15%	30%	25%	26%	26%	29%	29%	26%	28%
On-line computer interaction	4	9	4	8	8	8	8	6	8	7
Simultaneous audio-only inter- action	16	0	15	41	12	24	18	27	10	20
Simultaneous audio and video interaction	40	44	40	25	44	36	41	33	44	38
Don't know	14	37	17	11	19	16	12	13	20	16
Estimated Population Size	250	25	275	178	246	424	46	436	309	745

^a As determined from Item 28 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions reporting use of live camera-in-the-classroom television.

Table 53
Percentage of Institutions Reporting Instructor or Students Located Outside the Institution
During Use of Live Camera-In-The-Classroom Instruction,
By Level of Offering and Type of Control, 1984-85^a

Students or Instructor Remotely Located	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
No	72%	86%	73%	50%	74%	64%	75%	63%	75%	68%
Yes, on-camera instructor is located elsewhere	8	0	7	8	4	5	2	8	3	6
Yes, some students viewing are located elsewhere	17	0	16	42	12	24	10	28	10	20
Don't know	8	14	9	5	13	10	15	7	14	10
Estimated Population Size	250	25	275	178	246	424	46	436	309	745

^a As determined from Item 29 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions reporting use of live camera-in-the-classroom television.

Table 54
 Percentage of Institutions Reporting Use of
 Audio Conferencing for Instruction,
 By Level of Offering and Type of Control, 1984-85^a

Use of Audio Conferencing	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of institutions	12%	2%	10%	20%	7%	11%	13%	15%	6%	11%
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 30 of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 55
Percentage of Institutions Reporting Use of Other Interactive Media
in Conjunction with Audio Conferencing for Instruction,
By Level of Offering and Type of Control, 1984-85^a

Use of Other Interactive Media with Audio Conferencing	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
No	63%	32%	62%	54%	59%	56%	34%	57%	56%	57%
Yes, with visuals (e.g., elec- tronic blackboard, facsimile transmission)	20	34	21	30	27	29	50	26	29	27
Yes, computer conferencing	8	0	7	10	4	8	8	9	3	8
Don't know	12	34	13	10	11	11	16	12	11	12
Estimated Population Size	110	3	113	105	75	180	14	226	81	307

^a As determined from Item 31 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions that used audio conferencing for instruction.

SECTION V: SUPPORT
(Tables 56 through 98)

Table 56
Percentage of Institutions Reporting Membership in Computer Consortia,
By Level of Offering and Type of Control, 1984-85^a

Consortium Membership	Two Year			Four-Year			Total Prof./ Grad.	Total	Total	Total ^b
	Public	Private	Total	Public	Private	Total		Public	Private	
Percentage of Institutions	34%	17%	31%	49%	31%	37%	30%	40%	29%	34%
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 14 of the Computers for Instruction Questionnaire.

^b Analysis based on all institutions.

Table 57

AVERAGE NUMBER OF YEARS MEMBERSHIP IN CONSORTIUM
BY LEVEL OF OFFERING AND TYPE OF CONTROL, 1984-85^a

Years of Membership	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Number of years:										
Mean	5.93	3.53	5.73	8.55	6.04	7.12	4.58	7.09	5.72	6.54
Median	5.00	2.00	4.00	8.00	4.00	5.00	4.00	6.00	4.00	5.00
Mode	2	1	2	10	1	2	2	2	2	2
Estimated Population Size	315	30	345	265	333	598	33	593	383	976

^a As determined from Item 15 of the Computers for Instruction Questionnaire.

^b Analysis based on institutions with membership in computer consortia.

Table 58
 Percentage of Institutions Reporting Satisfaction with Consortium
 in Meeting Computer Needs,
 By Level of Offering and Type of Control, 1984-85^a

Satisfaction with Consortium	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of Institutions	78%	70%	77%	75%	73%	74%	74%	77%	73%	75%
Estimated Population Size	315	30	345	265	333	598	33	593	383	976

^a As determined from Item 16a of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions with computer consortium membership.

Table 59
 Percentage of Institutions Reporting Planning to Remain
 in Computer Consortium for Next Three Years,
 By Level of Offering and Type of Control, 1984-85^a

Plans to Retain Consortium Membership for Next Three Years	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of Institutions	96%	96%	96%	94%	95%	94%	93%	95%	95%	95%
Estimated Population Size	315	30	345	265	333	598	33	593	383	976

^a As determined from Item 16b of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions with computer consortium membership.

Table 60
Percentage of Institutions Reporting Various Services
Provided by Computer Consortium,
By Level of Offering and Type of Control, 1984-85^a

Consortium Services	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Group hardware buying	55%	44%	54%	47%	55%	52%	32%	51%	53%	52%
Group software buying	57	44	56	53	42	47	37	55	42	50
Software evaluation	61	43	60	45	39	41	32	53	38	47
Distribution of software developed by member institutions	55	39	53	50	41	45	41	52	41	48
Assistance in networking hardware	39	8	36	43	27	34	27	40	25	34
Providing instructional or training services	59	52	58	48	39	43	41	53	41	48
Cross-registration for computer courses	7	18	8	6	11	8	5	6	11	8
Library-related services	22	31	22	36	29	32	32	28	30	29
Large mainframe access	34	12	32	60	33	45	18	46	30	40
Other	10	13	11	7	17	13	13	9	16	12
Estimated Population Size	315	30	345	265	333	598	33	593	383	976

^a As determined from Item 17 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions with computer consortium membership.

Table 61
 Percentage of Institutions Reporting Membership
 in Video Consortia,
 By Level of Offering and Type of Control, 1984-85^a

Consortium Membership	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of institutions	48%	17%	43%	42%	23%	29%	30%	46%	22%	35%
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 36 of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 62
 Percentage of Institutions Reporting Membership
 in Audio/Radio Consortia,
 By Level of Offering and Type of Control, 1984-85^a

Consortium Membership	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of institutions	11%	8%	11%	12%	7%	8%	5%	11%	7%	9%
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 40 of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 63
Average Length of Membership in Video Consortium^a
By Level of Offering and Type of Control, 1984-85^a

Years of Membership	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Number of years:										
Mean	6.33	5.41	6.27	6.84	6.62	6.72	6.29	6.49	6.48	6.49
Median	5.00	3.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Mode	5	1	5	5	3	5	1	5	1	5
Estimated Population Size	444	31	475	226	245	471	33	686	293	979

^a As determined from Item 37 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions with membership in video consortium.

Table 64
 Percentage of Institutions Reporting Satisfaction with
 Consortium in Meeting Television-Related Needs,
 By Level of Offering and Type of Control, 1984-85^a

Satisfaction with Consortium	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of institutions	83%	60%	82%	69%	59%	64%	56%	78%	59%	72%
Estimated Population Size	444	31	475	228	245	471	33	688	293	979

^a As determined from Item 38a of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions with video consortium membership.

Table 65
 Percentage of Institutions Reporting Planning to Remain
 in Video Consortium for Next Three Years,
 By Level of Offering and Type of Control, 1984-85^a

Plans to Retain Consortium Membership for Next Three Years	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of institutions	98%	100%	98%	98%	98%	98%	97%	98%	98%	98%
Estimated Population Size	444	31	475	226	245	471	33	686	293	979

^a As determined from Item 38b of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions with video consortium membership.

Table 66
Percentage of Institutions Reporting Various Services
Provided by Video Consortium,
By Level of Offering and Type of Control, 1984-85^a

Consortium Services	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Television program previews	73%	26%	70%	57%	35%	46%	43%	67%	35%	58%
Television program exchange	52	51	52	48	53	51	39	51	52	51
Staff or faculty exchange	12	10	12	9	14	12	8	10	14	11
Original productions	38	19	37	38	34	36	49	38	33	37
Staff or faculty development	36	32	36	28	28	28	32	33	29	32
Group buy/acquisition (program rights)	80	45	78	66	53	60	35	74	51	68
Other	14	19	14	20	19	19	19	16	19	17
Estimated Population Size	444	31	475	228	245	471	33	686	293	979

^a As determined from Item 39 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions with video consortium membership.

Table 67
 Percentage of Institutions Reporting Offering Faculty
 Training in the Instructional Use of Computers
 By Level of Offering and Type of Control, 1984-85^a

Faculty Training Offered	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of Institutions	65%	55%	64%	71%	58%	63%	42%	67%	57%	63%
Estimated Population Size	863	140	1003	517	921	1438	77	1403	1115	2518

^a As determined from Item 29 of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions with computers available.

Table 68
Percentage of Institutions Reporting Offering Various Types
of Faculty Training in the Instructional Use of Computers,
By Level of Offering and Type of Control, 1984-85^a

Types of Training Offered	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Training in the operation of equipment	92%	97%	93%	91%	91%	91%	93%	92%	92%	92%
Training in the operation of "canned" applications software	93	94	93	93	92	93	90	93	92	93
Training in the selection of software	45	38	44	42	32	36	36	44	33	39
Training in the integration of student computer use with general instructional objectives	40	49	41	35	36	35	40	38	37	38
Training in the production or design of software	21	15	20	24	20	21	30	22	20	21
Training in the use of computers for instructional management and testing	44	35	43	38	27	31	36	41	28	36
Training of some kind in general instructional methods	39	38	39	35	29	31	39	37	30	34
Estimated Population Size	561	78	639	368	535	903	32	940	634	1574

^a As determined from Item 30 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions that offer faculty training in the use of computers for instruction.

Table 69
Percentage of Institutions Reporting Various Sources of Faculty
Training in the Instructional Use of Computers
By Level of Offering and Type of Control, 1984-85^a

Sources of Training	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Instructors from institution faculty	86%	81%	85%	75%	74%	74%	54%	81%	74%	78%
Instructors from institution staff	49	35	47	79	55	65	60	61	53	57
User groups from within the institution	18	8	17	25	15	19	22	21	14	18
Consortia staff	8	2	7	6	3	4	7	7	3	6
Manufacturer's representatives	23	15	22	20	13	16	25	22	13	18
Software producer's representatives	15	8	14	13	7	9	11	14	7	11
Outside consultants	18	20	18	12	13	13	18	16	14	15
Other	5	2	4	10	6	8	15	7	6	7
Estimated Population Size	561	78	639	368	535	903	32	940	634	1574

^a As determined from Item 31 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions that offer faculty training in the use of computers for instruction.

Table 70

AVERAGE NUMBER OF HOURS OF FACULTY TRAINING IN THE INSTRUCTIONAL USE OF COMPUTERS,
BY LEVEL OF OFFERING AND TYPE OF CONTROL, 1984-85^a

Hours of Training	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Number of Hours:										
Mean	16.30	13.81	16.03	13.50	14.00	13.79	9.02	15.13	13.85	14.61
Median	10.00	8.00	10.00	8.00	8.00	8.00	8.00	10.00	8.00	10.00
Mode	10	6	10	3	4	4	8	10	4	10.00
Estimated Population Size										
	561	78	639	368	535	903	32	940	634	1574

^a As determined from Item 32 of the Computers for Instruction Questionnaire.

^b Analysis restricted to institutions which offer faculty training in the instructional use of computers.

Table 71
Percentage of Institutions Reporting Various Types of Expert Assistance
to Faculty Who Wish to Use Computers for Instruction,
By Level of Offering and Type of Control, 1984-85^a

Type of Assistance	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
None ^b	43%	61%	46%	28%	45%	39%	56%	37%	48%	43%
In the evaluation of software ^c	42	21	39	45	36	39	27	43	33	39
In the acquisition of rights to use software ^c	28	8	25	34	25	28	15	30	23	26
In the operation of equipment ^c	55	40	52	68	54	59	38	60	51	56
In the integration of student computer use with general instructional objectives ^c	24	13	22	29	22	25	12	26	20	23
In the use of computers for instructional management and testing ^c	29	16	27	31	18	23	20	30	18	25

^a As determined from Item 33 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all institutions.

^c Analysis restricted to institutions reporting expert assistance to faculty.

Table 72
 Percentage of Institutions Reporting Offering
 Faculty Training in Use of Video Technologies for Instruction,
 By Level of Offering and Type of Control, 1984-85^a

Offer Faculty Training in Instructional Use of Video	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
No	32%	71%	38%	29%	45%	40%	56%	31%	49%	40%
Yes, formal, structured training	8	2	5	8	5	8	2	7	4	5
Yes, informal training	62	27	57	63	50	54	42	62	47	55
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 32 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all institutions.

Table 73
Average Length of Faculty Training in the
Instructional Use of Video,
By Level of Offering and Type of Control, 1984-85^a

Hours of Training	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Number of hours:										
Mean	4.56	4.38	4.55	5.48	8.66	7.43	7.85	5.02	8.15	6.25
Median	2.00	2.00	2.00	3.00	2.00	2.00	2.50	2.00	2.00	2.00
Mode	1	1	1	2	1	2	1	2	1	1
Estimated Population Size	631	53	684	384	590	974	46	1026	678	1704

^a As determined from Item 34 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions that offered faculty training in the use of video for instruction.

Table 74
Percentage of Institutions Reporting Various Types of Faculty Training
in the Instructional Use of Video Technologies,
By Level of Offering and Type of Control, 1984-85^a

Types of Faculty Training Offered	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Training in the selection of video/TV programs for use in instruction	41%	39%	41%	40%	36%	38%	33%	40%	37%	39%
Training in the production or design of video/TV programs for use of instruction	43	27	42	58	41	47	43	49	39	45
Training in the integration of video use with overall curri- culum content	37	21	36	43	36	38	28	39	34	37
Training in the integration of video use with overall instruc- tional methods	42	27	41	51	39	43	31	45	37	42
Any training at all in general instructional methods	44	40	44	49	41	44	54	48	41	44
Training in the operation of equipment	85	97	86	85	93	90	77	84	93	88
Estimated Population Size	631	53	684	384	590	974	46	1026	678	1704

^a As determined from Item 33 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions that offered faculty training in the instructional use of video.

Table 75
Percentage of Institutions Reporting Providing Various Types of Expert
Assistance to Faculty Using Video for Instruction,
By Level of Offering and Type of Control, 1984-85^a

Type of Expert Assistance Provided	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total
	Public	Private	Total	Public	Private	Total				
None ^b	22%	49%	26%	17%	33%	28%	33%	20%	36%	27%
Assistance in the evaluation of program materials ^c	54	47	53	49	34	40	43	52	36	45
Assistance in the acquisition of rights to use program materials ^c	83	50	62	59	46	51	38	61	46	55
Technical assistance in the oper- ation of equipment ^c	93	95	93	94	97	96	92	94	97	95
Expert assistance in the integra- tion of student video use with overall curriculum content ^c	31	22	30	37	26	30	20	33	25	30
Expert assistance in the integra- tion of student video use with overall instructional methods ^c	36	19	34	44	30	35	29	39	28	35
Other assistance ^c	8	4	7	13	7	9	12	10	7	9

^a As determined from Item 35 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all institutions.

^c Analysis restricted to institutions that provide expert assistance to faculty using video technologies.

Table 76
Percentage of Institutions Reporting Providing Assistance
to Faculty and/or Students in Purchasing Computer Hardware,
By Level of Offering and Type of Control, 1984-85^a

Hardware Purchasing Assistance	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
No Assistance	50%	72%	54%	22%	45%	37%	44%	39%	49%	44%
Assistance to students only	*	1	*	0	1	1	1	*	1	1
Assistance to faculty only	23	13	21	13	19	17	14	19	17	18
Assistance to both faculty and students	27	14	25	65	35	46	41	42	33	37
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 24 of the Computers for Instruction Questionnaire.

^b Analysis based on all institutions.

* Represents a positive percentage less than 0.5.

Table 77
Percentage of Institutions Reporting Various Faculty Incentives
for Development of Computer Programs,
By Level of Offering and Type of Control, 1984-85^a

Incentive	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Institution provides NO special incentives ^b	72%	87%	75%	62%	76%	71%	75%	68%	78%	73%
Faculty share in the royalties ^c	22	21	22	53	33	42	33	36	31	34
Faculty retain rights to programs ^c	28	45	29	48	54	51	39	37	52	43
Reduced course load for faculty ^c	44	27	43	26	20	22	14	36	20	29
Assistance in obtaining grants or contracts ^c	44	28	43	52	47	49	20	47	44	46
Legal assistance ^c	7	0	6	24	12	18	28	15	12	14
Clerical/logistical support ^c	46	11	43	44	41	43	38	45	38	42
Additional compensation	22	11	21	6	10	8	5	15	10	13
Other incentive ^c	7	11	7	5	9	7	14	6	10	7

^a As determined from Item 28 of the Computers for Instruction Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all institutions.

^c Analysis restricted to institutions that provide some faculty incentive.

Table 78
Percentage of Institutions Reporting Receiving Discounted or Free
Broadcast Time From Outlet for Video Telecourses^a
By Level of Offering and Type of Control, 1984-85

Receive Discounted/ Free Broadcast Time	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
No	42%	100%	43%	51%	74%	61%	91%	45%	76%	52%
Yes, free program broadcast time	23	0	23	24	9	18	0	23	9	20
Yes, reduced cost program broad- cast time	8	0	8	5	3	4	0	7	3	6
Yes, cable access channel(s)	45	0	44	36	19	29	9	42	17	37
Estimated Population Size	462	9	471	236	180	416	14	702	200	902

^a As determined from Item 15 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions that offered video telecourses.

Table 79
Percentage of Institutions Reporting Receiving Discounted or Free
Broadcast Time From Outlet for Audio Courses,
By Level of Offering and Type of Control, 1984-85^a

Received Discounted/ Free Broadcast Time	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
No	85%	100%	86%	76%	89%	83%	100%	82%	90%	85%
Yes, free program broadcast time	10	0	9	16	8	11	0	12	7	10
Yes, reduced cost program broad- cast time	2	0	2	2	0	1	0	2	0	1
Yes, cable access channel(s)	4	0	4	8	3	5	0	5	3	5
Estimated Population Size	109	6	115	56	79	135	4	167	87	254

^a As determined from Item 15 of the Instructional Video/Audio Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to institutions that offered audio courses.

Table 80
Tuition and Fees for Video Telecourses Relative
to Non-Media Courses,
By Level of Offering and Type of Control, 1984-85^a

Student Tuition and Fees for Video Telecourses	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Generally higher	9%	19%	9%	17%	9%	14%	13%	12%	9%	12%
Generally about the same	89	65	89	80	78	80	87	86	79	84
Generally lower	2	16	2	3	13	6	0	2	12	4
Estimated Population Size	462	9	471	236	180	416	14	702	200	902

^a As determined from Item 20 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions that offered video telecourses.

Table 81
Tuition and Fees for Audio Courses
Relative to Non-Media Courses,
By Level of Offering and Type of Control, 1984-85^a

Student Tuition and Fees for Audio Courses	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Generally higher	0%	0%	0%	2%	5%	4%	0%	1%	6%	2%
Generally about the same	98	74	96	93	85	88	66	95	83	92
Generally lower	2	26	4	5	10	8	34	4	11	6
Estimated Population Size	109	6	115	56	79	135	4	167	87	254

^a As determined from Item 20 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions that offered audio courses.

Table 82
 Percentage of Institutions Reporting Video Telecourses or Audio Courses
 Explicitly Identified in Catalog/Schedule of Courses,
 By Level of Offering and Type of Control, 1984-85^a

Catalog/Course Schedule Identifies Telecourses	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of institutions	64%	48%	63%	47%	31%	39%	25%	58%	32%	52%
Estimated Population Size	480	15	495	240	190	430	15	724	216	940

^a As determined from Item 21 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions that offered video telecourses or audio courses.

Table 83
 Percentage of Institutions Reporting Video Telecourses or Audio Courses
 are Distinguished from Other Courses on Student Transcripts,
 By Level of Offering and Type of Control, 1984-85^a

Student Transcripts Distinguish Telecourses	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of institutions	10%	40%	11%	18%	29%	22%	0%	12%	29%	15%
Estimated Population Size	307	7	314	112	60	172	4	420	70	490

^a As determined from Item 22 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions that explicitly identify video telecourses or audio courses in catalog/schedule of courses.

Table 84
Percentage of Institutions Reporting Various Policies Regarding
Transfer of Video Telecourse Credits,
By Level of Offering and Type of Control, 1984-85^a

Institutional Policy	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Institution does not normally recognize and accept telecourse credits earned elsewhere	4%	25%	7%	9%	24%	18%	46%	7%	25%	15%
Institution normally recognizes and accepts telecourse credits earned elsewhere	54	20	49	31	16	22	10	45	16	32
Telecourse credits earned elsewhere are recognized on a case-by-case or department-by-department basis	42	55	44	60	60	60	44	48	59	53
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 25 of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 85
Percentage of Institutions Reporting Various Policies Regarding
Transfer of Audio Course Credits,
By Level of Offering and Type of Control, 1984-85^a

Institutional Policy	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Institution does not normally recognize and accept telecourse credits earned elsewhere	8%	26%	11%	11%	26%	21%	48%	10%	27%	18%
Institution normally recognizes and accepts telecourse credits earned elsewhere	45	14	40	26	13	18	11	37	13	26
Telecourse credits earned elsewhere are recognized on a case-by-case or department-by-department basis	47	60	49	63	61	61	41	53	60	56
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 25 of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 86
Institutional Policies Regarding Video Telecourse Credits Earned
and Degree Requirements,
By Level of Offering and Type of Control, 1984-85^a

Institutional Policy	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Institution policy makes no distinction between telecourse credits earned for major field of study and other degree requirements	65%	46%	63%	44%	40%	42%	45%	57%	42%	50%
Institution policy restricts the use of telecourse credits in meeting requirements for a major field of study	3	4	3	4	5	5	7	3	5	4
Institution policy varies from department to department	7	7	7	18	10	13	3	11	9	10
Institution has no settled policy toward use of telecourse credits in meeting degree requirements	25	43	27	34	45	40	45	29	44	36
Estimated Population Size	926	180	1106	541	1073	1614	110	94	1336	2830

^a As determined from Item 26 of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 87
Institutional Policies Regarding Audio Course Credits Earned
and Degree Requirements,
By Level of Offering and Type of Control, 1984-85^a

Institutional Policy	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Institution policy makes no distinction between course credits earned for major field of study and other degree requirements	64%	46%	61%	43%	40%	41%	44%	56%	41%	49%
Institution policy restricts the use of audio course credits in meeting requirements for a major field of study	2	4	3	4	5	4	6	3	5	4
Institutional policy varies from department to department	7	6	6	18	10	13	3	11	9	10
Institution has no settled policy toward use of tele-course credits in meeting degree requirements	27	44	30	35	45	42	47	30	45	37
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 26 of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 88
 Percentage of Institutions Reporting Existence of a Task Force,
 Study Group, or Individual Administrator to Investigate Uses and Facilities,
 for Instructional Use of Audio, Video, and Computers,
 By Level of Offering and Type of Control, 1984-85^a

Existence of Task Force, Study Group, or Administrator for Instructional Technology	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Percentage of Institutions	67%	58%	66%	67%	62%	64%	64%	67%	62%	65%
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 7 of the Computers for Instruction Questionnaire.

^b Analysis based on all institutions.

Table 89
Primary Decision Making Responsibility for Computers^a

Responsibility	Board of Trustees	Adminis- trative Officer	Academic Officer	Department Head	Faculty Committee	Individual Faculty	Computer Center Staff	Not Applicable
Planning faculty training for instructional uses of computers ^b	*	3%	36%	13%	13%	10%	23%	2%
Selecting computer main- frame/mini hardware (brand and supplies) ^c	3	21	9	9	15	2	38	3
Selecting microcomputer hardware (brand and supplies) ^d	1	12	12	22	21	12	19	1
Selecting general use software for main- frame/minicomputer ^c	1	12	7	13	14	6	45	3
Selecting course-specific software for mainframe/ minicomputer ^c	*	2	5	20	17	39	10	7
Selecting general use software for micro- computers ^d	*	5	6	20	18	28	21	2
Selecting course-specific software for microcomputers ^d	*	1	4	18	12	59	4	2
Deciding what computer- related skills and knowledges are to be learned by students ^e	1	1	13	15	38	25	2	5

Table 89 (continued)
Primary Decision Making Responsibility for Computers^a

Responsibility	Board of Trustees	Adminis- trative Officer	Academic Officer	Department Head	Faculty Committee	Individual Faculty	Computer Center Staff	Not Applicable
Representing institution in computer consortium decision making	*	15%	22%	12%	4%	6%	33%	7%
Establishment of incentives/ rewards for software development by faculty ^e	2	4	21	3	3	1	1	65
Determining frequency and amount of student use of computers ^e	*	2	10	17	12	25	23	11
Establishing any separate charges for student use of computers ^e	6	18	16	6	5	1	11	37

- ^a As determined from Item 27 of the Computers for Instruction Questionnaire.
^b Analysis restricted to institutions where faculty training is offered.
^c Analysis restricted to institutions where mainframe/minicomputers available.
^d Analysis restricted to institutions where microcomputers available.
^e Analysis restricted to institutions where computers available.
^f Analysis restricted to institutions with membership in computer consortium.
* Represents a positive percentage less than 0.5.

Table 90
Primary Decision Making Responsibility for Video/Audio Technologies^a

Responsibility	Board of Trustees	Adminis- trative Officer	Academic Officer	Department Head	Faculty Committee	Individual Faculty	Specialized Audio/ Video Staff	Not Applicable
Determining telecourse/ audio course offerings ^b	2%	2%	39%	28%	12%	9%	6%	2%
Establishing budget for telecourse/audio course offerings ^b	3	13	51	17	1	1	10	3
Determining faculty assignments for tele- courses/audio courses ^b	*	2	35	51	2	6	2	2
Determining student tuition and fees for telecourses/ audio courses ^b	37	24	23	2	1	*	1	12
Planning faculty training for instruc- tional use of video/ audio ^c	*	2	24	12	4	5	49	4
Establishing budget for purchasing class- room video/audio equipment ^d	3	17	27	16	1	1	29	6
Selection of brand or supplier for class- room video/audio equipment ^d	*	6	6	16	2	4	59	7

Table 9C (continued)
Primary Decision Making Responsibility for Video/Audio Technologies^a

Responsibility	Board of Trustees	Adminis- trative Officer	Academic Officer	Department Head	Faculty Committee	Individual Faculty	Specialized Audio/ Video Staff	Not Applicable
Determining whether classroom video/ audio equipment is placed in specific location or rotated among classrooms on request ^d	*	4%	18%	14%	3%	2%	51%	7%
Determining tele- course/audio course require- ments on trans- ferability ^d	2	6	51	8	9	*	*	24
Representing insti- tution in telecourse/ audio course consor- tium decision making ^e	0	3	34	19	1	3	30	9

^a As determined from Item 46 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions that offered video telecourses or audio courses.

^c Analysis restricted to institutions that offered faculty training in instructional use of video/audio technology.

^d Analysis based on all institutions.

^e Analysis restricted to institutions with membership in video or audio consortia.

Table 91

TWO-YEAR FUNDING EXPECTATIONS FOR INSTRUCTIONAL
COMPUTER USE BY SOURCE OF FUNDING, 1984-85^a

Source of Funding	Direction of Funding ^b			
	Increase	Remain the Same	Decrease	Don't Know
General operating funds of the institution	45%	31%	6%	17%
Internally generated funds	6	29	1	63
Special fees for computer use	20	36	2	41
Special state appropriations	16	29	6	48
Non-federal grants and contracts	30	24	3	43
Federal grants and contracts	17	27	11	45

^a As determined from Item 37 of the Computers for Instruction Questionnaire.

^b Analysis based on all institutions.

Table 92

TWO-YEAR EXPECTATIONS OF EXPENDITURES FOR
INSTRUCTIONAL COMPUTER USE BY TYPE OF EXPENDITURE, 1984-85^a

Type of Expenditure	Direction of Funding ^b			
	Increase	Remain the Same	Decrease	Don't Know
Equipment	57%	19%	8%	15%
Software	65	17	3	15
Personnel	44	34	3	19

^a As determined from Item 38 of the Computers for Instruction Questionnaire.

^b Analysis based on all institutions.

Table 93
Two-Year Funding Expectations for
Instructional Video/Audio Use by Source of Funding, 1984-85^a

Source of Funding	Direction of Funding ^b			
	Increase	Remain the Same	Decrease	Don't know
General operating funds of the institution	32%	41%	8%	19%
Internally generated funds	10	33	2	56
Telecourse tuition and fees	15	32	2	51
Special state appropriations	8	31	7	55
Non-federal grants and contracts	18	26	4	53
Federal grants and contracts	10	27	4	54

^a As determined from Item 44 of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 94
Two-Year Expectations of Expenditures
for Instructional Video/Audio Use
by Type of Expenditure, 1984-85^a

Type of Expenditure	Direction of Expenditure ^b			
	Increase	Remain the Same	Decrease	Don't know
<u>Video:</u>				
Equipment	48%	32%	5%	15%
Programs/Materials	46	33	4	17
Personnel	20	56	4	20
<u>Audio:</u>				
Equipment	28	48	5	20
Programs/Materials	25	48	5	22
Personnel	9	62	4	25

^a As determined from Item 45 of the Instructional Video/Audio Questionnaire.
^b Analysis based on all institutions.

Table 95
Two-Year Plans for Use of Video Telecourses,
By Level of Offering and Type of Control, 1984-85^a

Two-Year Plans for Video Telecourses	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
On-campus:										
Expect to expand use	44%	36%	43%	43%	30%	34%	28%	43%	31%	37%
Expect use to remain about the same	53	63	54	55	68	64	71	54	67	61
Expect to decrease use	3	1	3	2	2	2	1	3	2	2
Off-campus:										
Expect to expand use	40	11	35	37	15	22	13	38	14	27
Expect use to remain about the same	57	87	62	60	83	75	86	59	84	71
Expect to decrease use	3	2	3	3	2	3	1	3	2	2
Estimated Population Size	926	180	1106	541	1073	1614	110	1494	1336	2830

^a As determined from Item 23a of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 96
Two-Year Expectations Regarding Enrollments in Video Telecourses
By Level of Offering and Type of Control, 1984-85^a

Expected Direction of Change	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Increase	66%	73%	66%	65%	63%	64%	70%	66%	63%	65%
Decrease	5	0	5	4	4	4	0	5	4	4
Remain about the same	29	27	29	31	33	32	30	29	33	31
Estimated Population Size	462	9	471	236	180	416	14	702	200	902

^a As determined from Item 24 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions that offered video telecourses.

Table 97
Two-Year Plans for Use of Audio Courses,
By Level of Offering and Type of Control, 1984-85^a

Two-Year Plans for Audio Courses	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
On-campus:										
Expect to expand use	18%	29%	20%	17%	15%	16%	12%	18%	17%	17%
Expect use to remain about the same	78	69	77	79	83	81	86	79	81	80
Expect to decrease use	4	2	3	4	2	3	2	3	2	3
Off-campus:										
Expect to expand use	15	9	14	15	6	9	8	15	7	11
Expect use to remain about the same	82	90	83	82	92	88	90	82	91	86
Expect to decrease use	3	1	3	3	2	3	2	3	2	3
Estimated Population Size	926	180	1106	541	1073	1614	110	494	1336	2830

^a As determined from Item 23b of the Instructional Video/Audio Questionnaire.

^b Analysis based on all institutions.

Table 98
Two-Year Expectations Regarding Enrollments in Audio Courses,
By Level of Offering and Type of Control, 1984-85^a

Expected Direction of Change	Two-Year			Four-Year			Total Prof./ Grad.	Total Public	Total Private	Total ^b
	Public	Private	Total	Public	Private	Total				
Increase	54%	64%	55%	31%	41%	36%	80%	47%	43%	46%
Decrease	4	0	4	9	0	4	0	5	0	3
Remain about the same	42	36	41	60	59	60	20	48	57	51
Estimated Population Size	109	6	115	56	79	135	4	167	87	254

^a As determined from Item 24 of the Instructional Video/Audio Questionnaire.

^b Analysis restricted to institutions that offered audio courses.

Section VI. Teacher Education

(Tables 99 through 126)

Table 99
Percentage of Programs Reporting Availability of
Various Kinds of Equipment,
By Type of Teacher Education Program, 1984-85^a

Equipment	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Television Sets	95%	96%	99%	98%	95%	97%
Videocassette/videotape recorders	96	98	99	98	95	98
Videodisc players	32	37	43	41	41	37
Video cameras	93	95	98	97	87	95
Radios	69	70	66	68	63	68
Audiocassette/tape recorders	97	97	97	97	98	99
Audio conferencing facilities	26	34	52	43	27	36
Record players	96	94	96	95	90	95
Pocket calculators (programmable)	39	48	48	48	37	44
Microcomputers	90	95	98	96	87	93
Word processors	81	86	87	87	82	84
Computer modems	49	65	74	69	64	61
Terminals connected to mini/mainframe computers	65	77	90	84	73	76
Local area microcomputer networks	27	30	43	37	41	33
Interactive videodisc players (with computers for control)	10	12	28	20	18	15
Videotex terminals	9	11	16	14	14	12
Teletext converters	8	8	12	9	9	9
Estimated Population Size	498	332	347	679	25	1202

^a As determined from Item 29 of the Teacher Education Questionnaire.

^b Analysis based on all programs.

Table 100
Percentage of Programs Reporting Availability of
Various Program Materials in Instructional Materials Centers,
By Type of Teacher Education Program, 1984-85^a

Program Materials	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 or Less Students	More Than 500 Students	Total		
Videocassettes/tapes or videodiscs	79%	84%	88%	86%	78%	83%
Interactive videodisc packages with computer software	15	20	26	23	18	19
Audiocassettes/tapes or records (music only)	75	71	74	72	52	73
Audiocassettes/tapes or records (excluding music only)	76	77	81	79	60	77
Instructional courseware for micros	64	77	86	81	69	74
Modular software for programmed instruction on micros	49	55	70	63	52	57
Business applications software (e.g., VisiCalc) for micros	39	48	67	58	52	50
Word processing software (e.g., Word Star) for micros	65	73	82	78	78	72
Computer-based instructional management software for micros	42	46	63	55	43	49
Statistical analysis packages for micros	42	51	72	62	43	53
Data base systems for micros (e.g., dBase II)	34	46	65	56	52	47
Microcomputer software documentation	37	48	65	57	43	48
Mainframe software documentation	25	33	45	39	31	33
None of the above	7	4	2	3	9	5
Estimated Population Size	498	332	347	679	25	1202

^a As determined from Item 30 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all programs.

Table 101
 Percentage of Programs Reporting Offering
 Teacher Training to Students in the Instructional Uses of Computers,
 By Type of Teacher Education Program, 1984-85^a

Training in Instructional Computer Use Offered to Students	Under- graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Percentage of programs	72%	87%	98%	93%	91%	84%
Estimated Population Size	498	332	347	679	25	1202

^a As determined from Item 3 of the Teacher Education Questionnaire.

^b Analysis based on all programs.

Table 102
Percentage of Programs Reporting Offering Various Types of
Student Training in the Instructional Uses of Computers,
By Type of Teacher Education Program, 1984-85^a

Type of Training	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Training in the uses of computers in instructional management (testing, recordkeeping)	67%	73%	86%	80%	81%	75%
Training in the "tool" uses of computers (e.g., spread sheet, word processing, problem solving)	74	78	88	84	100	81
Training in the use of computers for interactive control of video or audio materials	18	24	44	36	34	30
Training in the use of computers for delivery of programmed instruction (e.g., tutorials, drill and practice)	85	88	94	90	88	89
Training in the integration of computer use with overall instructional methods	77	87	92	90	94	85
Training in the integration of computer use with overall curriculum content	65	78	85	82	82	76
Training in writing or design of computer programs	65	68	81	75	54	71
Training in the selection of software for uses in instruction	78	88	96	93	100	88
Training in the management of multiple small groups of students using computers	43	52	60	57	69	52
Training in the operation of equipment	91	89	97	94	93	93
Other	36	37	28	32	33	34
Estimated Population Size	358	289	340	629	23	1010

^a As determined from Item 4 of the Teacher Education Questionnaire.

^b Analysis restricted to programs that offered some training in computers.

Table 103
Percentage of Programs Reporting Requiring Various Types of
Student Training in the Instructional Uses of Computers,
By Type of Teacher Education Program, 1984-85^a

Type of Training	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Training in the uses of computers in instructional management (testing, recordkeeping)	32%	29%	25%	27%	19%	28%
Training in the "tool" uses of computers (e.g., spread sheet, word processing, problem solving)	32	28	23	26	38	28
Training in the use of computers for interactive control of video or audio materials	5	7	8	8	7	7
Training in the use of computers for delivery of programmed instruction (e.g., tutorials, drill and practice)	49	41	40	41	38	43
Training in the integration of computer use with overall instructional methods	47	41	41	41	47	43
Training in the integration of computer use with overall curriculum content	39	32	36	34	38	36
Training in writing or design of computer programs	20	17	14	15	7	17
Training in the selection of software for uses in instruction	45	39	39	39	50	41
Training in the management of multiple small groups of students using computers	19	17	15	16	25	17
Training in the operation of equipment	61	46	49	48	40	52
Other	4	3	6	5	0	5
Estimated Population Size	358	289	340	629	23	1010

^a As determined from Item 4 of the Teacher Education Questionnaire.

^b Analysis restricted to programs that offered training in computers.

Table 104
Percentage of Programs That Offered Various Types of Teacher
Training Programs in the Instructional Uses of Computers,
By Type of Teacher Education Program, 1984-85^a

Type of Training Program	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Module(s) within an education course	66%	60%	70%	66%	68%	66%
A Full Course	58	79	91	86	81	76
Summer Institutes	16	40	56	49	43	38
Workshops	34	55	76	67	81	56
Other	7	5	9	7	13	7
Estimated Population Size	358	289	340	629	23	1010

^a As determined from Item 5 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to programs that offered training in computers.

Table 105
 Percentage of Programs Reporting Various Resources
 Responsible for Conducting Teacher Training in Instructional Computer Use,
 By Type of Teacher Education Program, 1984-85^a

Responsibility for Training	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
School/Department of Education faculty	75%	83%	96%	91%	88%	85%
Computer science faculty	59	49	42	45	19	49
Other faculty within the institution	21	23	22	22	25	22
School districts	4	6	12	10	25	8
Vendors	2	2	2	2	6	2
Other private industry	1	1	1	1	0	1
Outside consultants	5	15	11	12	19	10
Other	3	6	5	5	0	5
Estimated Population Size	358	289	340	629	23	1010

^a As determined from Item 6 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to programs that offered training in computers.

Table 106
 Percentage of Programs Reporting Teacher Training in the
 Instructional Uses of Computers Required for Some Preservice Students,
 By Type of Teacher Education Program, 1984-85^a

Training in Instructional Computer Use Required for Preservice Students	Under- graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Percentage of programs	63%	53%	56%	55%	36%	57%
Estimated Population Size	358	289	340	629	23	1010

^a As determined from Item 10 of the Teacher Education Questionnaire.

^b Analysis restricted to programs that offered training in computers.

Table 107
Percentage of Programs Reporting Various Grade Level Specialties
Requiring Training in the Instructional Uses of Computers,
By Type of Teacher Education Program, 1984-85^a

Grade Level Specialties	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Early childhood	47%	49%	54%	52%	28%	50%
Elementary school	90	81	77	79	71	83
Secondary school	73	71	69	70	71	71
Adult basic education	1	0	1	1	0	1
All of the above	4	10	17	14	29	10
Estimated Population Size	225	153	190	343	8	576

^a As determined from Item 11 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to programs that require training in computers.

Table 108
Percentage of Programs Reporting Various Types of Teacher
Training Programs in Instructional Computer Use Required for Preservice Students,
By Type of Teacher Education Program, 1984-85^a

Type of Training Program	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Module(s) within an education course	79%	69%	71%	70%	100%	74%
A full course	41	60	63	62	33	54
Summer institutes	9	14	20	17	33	14
Workshops	19	28	32	30	50	26
Other	3	1	3	2	0	2
Estimated Population Size	225	153	190	343	8	576

^a As determined from Item 12 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to programs that require training in computers.

Table 109
 Percentage of Programs Reporting Computer Literacy
 Requirements for All Students,
 By Type of Teacher Education Program, 1984-85^a

Student Computer Literacy Policy	Under- graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Percentage of programs	20%	21%	30%	26%	0%	23%
Estimated Population Size	498	332	347	679	25	1202

^a As determined from Item 14 of the Teacher Education Questionnaire.

^b Analysis based on all programs.

Table 110
Percentage of Programs Reporting Various Elements
of Computer Literacy Policies,
By Type of Teacher Education Program, 1984-85^a

Elements of Computer Literacy Policy	Under- graduate Program Only	Undergraduate and Graduate Program			Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total	
Students should take an intro- ductory course in computers for credit	69%	76%	70%	72%	71%
Students should be able to write a simple computer program	63	63	56	58	60
Students should be able to doc- ument their own programming	38	39	38	38	38
Students should be able to test and debug simple programs	37	45	48	47	43
Students should know how to develop simple computer- oriented algorithms	21	37	40	39	32
Students should be able to doc- ument their own algorithms	14	30	22	26	21
Students should know general operations or procedures for using canned software	82	81	89	85	84
Students should know what gen- eral types of problems are amenable to computer solution	49	66	76	72	63
Students should understand the potential use of large bodies of quantitative data in a par- ticular field of study	30	37	34	35	33
Students should be familiar with the social implications of com- puter use	48	61	62	62	57
Students should be familiar with the ethical issues associated with computer use	62	72	78	76	71
Other	7	10	13	12	10
Estimated Population Size	100	70	104	174	274

^a As determined from Item 15 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to programs with computer literacy requirements.

Table 111
 Percentage of Programs Reporting Offering Teacher Training
 to Students in the Instructional Uses of Video,
 By Type of Teacher Education Program, 1984-85^a

Training in Instructional Video Uses Offered To Students	Under- graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Percentage of programs	63%	57%	72%	65%	58%	64%
Estimated Population Size	498	332	347	679	25	1202

^a As determined from Item 16 of the Teacher Education Questionnaire.

^b Analysis based on all programs.

Table 112
Percentage of Programs Reporting Offering Various Types of
Student Training in the Instructional Uses of Video.
By Type of Teacher Education Program, 1984-85^a

Type of Training	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Training in the selection of video/TV programs for use in instruction	62%	70%	74%	73%	88%	69%
Training in the production or design of video/TV programs for use in instruction	34	45	67	58	75	48
Training in the use of live interactive television for instruction	34	35	43	39	26	37
Training in the integration of video use with general instructional objectives	75	85	87	86	100	82
Training in the integration of video with overall curriculum content	67	74	79	77	100	73
Training in the use of video enhancements with computers	18	22	43	35	37	28
Training in the operation of equipment	94	92	94	94	88	94
Estimated Population Size	314	189	250	439	15	768

^a As determined from Item 17 of the Teacher Education Questionnaire.

^b Analysis restricted to programs that offered some training in video.

Table 113
Percentage of Programs Reporting Requiring Various Types of
Student Training in the Instructional Uses of Video,
By Type of Teacher Education Program, 1984-85^a

Type of Training	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Training in the selection of video/TV programs for use in instruction	43%	44%	29%	35%	50%	39%
Training in the production or design of video/TV programs for use in instruction	16	14	14	14	25	15
Training in the use of live interactive television for instruction	22	16	12	13	13	17
Training in the integration of video use with general instructional objectives	57	55	38	45	50	50
Training in the integration of video with overall curriculum content	49	48	33	39	50	43
Training in the use of video enhancements with computers	5	6	9	8	12	7
Training in the operation of equipment	75	68	49	57	38	64
Estimated Population Size	314	189	250	439	15	768

^a As determined from Item 17 of the Teacher Education Questionnaire.

^b Analysis restricted to programs that offered some training in video.

Table 114
 Percentage of Programs That Offered Various Types of Teacher
 Training Programs in the Instructional Uses of Video,
 By Type of Teacher Education Program, 1984-85^a

Type of Training Program	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Module(s) within an education course	85%	77%	73%	75%	50%	78%
A full course	20	36	60	50	62	38
Summer institutes	3	10	13	12	0	8
Workshops	14	19	30	25	75	22
Other	4	6	2	3	13	4
Estimated Population Size	314	189	250	439	15	768

^a As determined from Item 18 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to programs that offered training in video.

Table 115
Percentage of Programs Reporting Various Resources
Responsible for Conducting Teacher Training in Instructional Video Use,
By Type of Teacher Education Program, 1984-85^a

Responsibility for Training	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
School/Department of Education faculty	82%	80%	92%	87%	100%	85%
Specialized audio/video staff	44	41	48	45	26	44
Other faculty within the institution	13	9	17	14	12	13
School districts	2	4	2	2	0	2
Local public TV station personnel	*	3	2	2	0	1
Other private industry	0	0	1	*	0	*
Outside consultants	3	5	2	3	0	3
Other	2	4	2	3	0	2
Estimated Population Size	314	189	250	439	15	768

^a As determined from Item 19 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to programs that offered training in video.

* Represents a positive percentage less than 0.5.

Table 116
 Percentage of Programs Reporting Teacher Training in the Instructional
 Uses of Video Required for Some Preservice Students,
 By Type of Teacher Education Program, 1984-85^a

Training in Instructional Video Use Required for Preservice Students	Under- graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Percentage of programs	72%	59%	60%	60%	50%	64%
Estimated Population Size	314	189	250	439	15	768

^a As determined from Item 21 of the Teacher Education Questionnaire.

^b Analysis restricted to programs that offered training in video.

Table 117
 Percentage of Programs Reporting Various Grade Level Specialties
 Requiring Training in the Instructional Uses of Video,
 By Type of Teacher Education Program, 1984-85^a

Grade Level Specialties	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Early childhood	45%	51%	52%	52%	50%	49%
Elementary school	87	85	78	81	74	84
Secondary school	83	74	77	76	74	79
Adult basic education	0	1	1	1	0	*
All of the above	5	4	13	9	26	8
Estimated Population Size	226	112	150	262	7	495

^a As determined from Item 22 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to programs that require training in video.

* Represents a positive percentage less than 0.5.

Table 118
 Percentage of Programs Reporting Offering Teacher Training
 to Students in the Instructional Uses of Audio.
 By Type of Teacher Education Program, 1984-85^a

Training in Instructional Audio Use Offered to Students	Under- graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Percentage of programs	80%	44%	61%	53%	33%	55%
Estimated Population Size	498	332	347	679	25	1202

^a As determined from Item 24 of the Teacher Education Questionnaire.

^b Analysis based on all programs.

Table 119
Percentage of Programs Reporting Offering Various Types of
Student Training in the Instructional Uses of Audio,
By Type of Teacher Education Program, 1984-85^a

Type of Training	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Training in the use of audio conferencing in instruction	19%	27%	35%	32%	20%	26%
Training in the selection of audio materials for use in instruction	82	82	89	86	60	85
Training in the production or design of audio materials for use in instruction	62	65	78	73	80	69
Training in the use of music/speech synthesizers in instruction	16	21	32	27	40	23
Training in the integration of audio use with overall instructional methods	85	79	91	86	100	86
Training in the integration of audio use with overall curriculum content	75	70	84	78	100	78
Training in the operation of equipment	95	96	97	96	100	95
Estimated Population Size	300	146	212	358	8	666

^a As determined from Item 25 of the Teacher Education Questionnaire.

^b Analysis restricted to programs that offered some training in audio.

Table 120
Percentage of Programs Reporting Requiring Various Types of
Student Training in the Instructional Uses of Audio.
By Type of Teacher Education Program, 1984-85^a

Type of Training	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Training in the use of audio conferencing in instruction	11%	17%	13%	15%	0%	13%
Training in the selection of audio materials for use in instruction	63	62	49	54	20	58
Training in the production or design of audio materials for use in instruction	39	42	40	41	20	40
Training in the use of music/speech synthesizers in instruction	6	11	4	7	0	7
Training in the integration of audio use with overall instructional methods	68	63	48	54	40	60
Training in the integration of audio use with overall curriculum content	59	56	46	50	40	54
Training in the operation of equipment	81	74	61	66	60	72
Estimated Population Size	300	146	212	358	8	666

^a As determined from Item 25 of the Teacher Education Questionnaire.

^b Analysis restricted to programs that offered some training in audio.

Table 121
Number (and Percentage) of Students Receiving Training
in the Instructional Uses of Technologies,
By Type of Teacher Education Program, 1984-85^a

Type of Training Received	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
<u>Computers:</u>						
Undergraduate Students	11,921 (24%)	10,763 (28%)	43,371 (16%)	54,134 (17%)	NA	66,055 (18%)
Graduate Students	NA	7,907 (28%)	35,924 (17%)	43,831 (18%)	1,760 (27%)	45,591 (18%)
<u>Video Technologies:</u>						
Undergraduate Students	9,357 (21%)	5,777 (22%)	27,964 (15%)	33,741 (16%)	NA	43,098 (17%)
Graduate Students	NA	1,985 (11%)	11,240 (8%)	13,225 (8%)	617 (13%)	13,842 (8%)
<u>Audio Technologies:</u>						
Undergraduate Students	9,013 (21%)	4,639 (21%)	25,509 (14%)	30,148 (15%)	NA	39,161 (16%)
Graduate Students	NA	1,774 (12%)	6,676 (5%)	8,450 (6%)	805 (29%)	9,300 (6%)

^a As determined from Items 2, 7, 20, and 26 of the Teacher Education Questionnaire.

^b Analysis restricted to programs that offer training in particular technology.

Table 122
 Percentage of Programs Reporting Differences in Training Offered
 in the Instructional Uses of Technologies to Graduate and Undergraduate Students,
 1984-85^a

Training	Type of Technology ^b		
	Computers	Video	Audio
Training program is about the <u>same</u> for graduate and undergraduate students	42%	39%	47%
<u>Amount</u> of training is very different for graduate students	41	38	33
<u>Kind</u> of training is very different for graduate students	45	40	34

^a As determined from Items 8, 23, and 27 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied.

^b Analysis restricted to programs that offered training in particular technology and enrolled both undergraduate and graduate students.

Table 123
Average Length of Training Offered
in Instructional Computer Use.
By Type of Teacher Education Program, 1984-85^a

Hours of Training	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
<u>Number of hours:</u>						
Undergraduate students						
Mean	24	31	36	34	NA	30
Median	12	15	20	15	NA	15
Graduate students						
Mean	NA	49	64	57	75	38
Median	NA	20	30	30	30	30
Estimated Population Size	358	289	340	629	23	1010

^a As determined from Item 9 of the Teacher Education Questionnaire.

^b Analysis restricted to programs that offered training in computers.

Table 124
Percentage of Programs Reporting Various Plans for
Training in the Instructional Uses of Computers,
By Type of Teacher Education Program, 1984-85^a

Training Plans	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Adding new qualified faculty	17%	32%	43%	38%	46%	30%
Adding new courses	48	63	75	89	87	61
Phasing out certain courses	6	9	11	10	20	9
Expanding facilities and/or equipment	70	73	84	79	93	76
Initiating a joint program with local industry	2	4	8	6	13	5
Increasing emphasis on training in the selection of software	62	67	65	66	46	64
Decreasing emphasis in the training of the operation of equipment	3	8	12	10	0	7
Estimated Population Size	498	332	347	679	25	1202

^a As determined from Item 13 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all programs.

Table 125
Percentage of Programs Reporting Various Plans for
Training in the Instructional Uses of Video,^a
By Type of Teacher Education Program, 1984-85^a

Training Plans	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Adding new qualified faculty	11%	16%	24%	21%	25%	16%
Adding new courses	17	28	41	35	50	28
Phasing out certain courses	5	5	10	8	0	7
Expanding facilities and/or equipment	61	57	69	63	75	63
Initiating a joint program with local industry	2	8	7	8	0	5
Increasing emphasis on training in the selection of media and program materials	67	65	63	64	62	65
Decreasing emphasis in the operation of equipment	4	7	12	10	0	7
Estimated Population Size	498	332	347	679	25	1202

^a As determined from Item 28 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all programs.

Table 126
Percentage of Programs Reporting Various Plans for
Training in the Instructional Uses of Audio,^a
By Type of Teacher Education Program, 1984-85^a

Training Plans	Under-graduate Program Only	Undergraduate and Graduate Program			Graduate Program Only	Total ^b (All Programs)
		500 Students or Less	More Than 500 Students	Total		
Adding new qualified faculty	10%	13%	20%	17%	29%	14%
Adding new courses	15	26	25	25	43	21
Phasing out certain courses	6	5	8	7	15	7
Expanding facilities and/or equipment	55	52	56	54	57	55
Initiating a joint program with local industry	1	10	3	6	0	4
Increasing emphasis on training in the selection of media and program materials	66	67	66	66	57	66
Decreasing emphasis in the training of the operation of equipment	3	8	12	10	0	7
Estimated Population Size	498	332	347	679	25	1202

^a As determined from Item 28 of the Teacher Education Questionnaire. Respondents were asked to circle all that applied.

^b Analysis based on all programs.